

HUMAN ECONOMICS

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BOOKS I. AND II.

NATURAL ECONOMY
&
COSMOPOLITAN ECONOMY

BY

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PREFACE

THE Author in the practice of his profession of chartered accountant has had daily experience of the actualities of production, distribution, and finance in most branches of commercial life. Tracing these back to their ultimate causes, he has been led to conclusions differing somewhat from those of the standard writers on Human Economics. The first portion of this book, *Natural Economy*, was published nine years ago, when the prior claims of his profession left little probability that the author could complete the second portion. The reception given by reviewers to the first portion, however, induced him to continue his work, but he has frequently been compelled to lay it by for long periods, and has had to deal briefly with many points worthy of fuller consideration. The next step in the author's scheme would be to examine the condition of each country, commencing with his own, by the light of the conclusions drawn in this book, but he has not the necessary leisure, and that is his excuse for the short trespass in the last chapter beyond the bounds of *Cosmopolitan Economy*, in relation to the vital question of tariff reform.

A. H. G.

BIRMINGHAM, 29th March 1909.

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Errata

Page 251, line 5, for Capital read Faculties
" 337, " 15, for is read are
" 341, " 15, figures wrongly stated, read as £8,000,000.

BOOK I

NATURAL ECONOMY

CHAPTER I

THE SCOPE AND DIVISIONS OF POLITICAL ECONOMY

ALL forms of terrestrial life require for their continued existence supplies of certain other terrestrial objects, animate or inanimate, which they devour, absorb, or utilise—in the language of Political Economy ‘consume.’ Each form or species has diverse requirements and distinct faculties wherewith to satisfy them; as we ascend in the scale of life, these requirements become more numerous and the related faculties more complex. The investigation into the working of the faculties of all species below man in furnishing the means of existence is regarded as falling within the various branches of the naturalist’s science, which has also dealt with the bodily structure of the human species; but the working of human faculties in providing for human wants has been treated as a distinct science, misnamed Political Economy. This division is somewhat illogical, and tends to the creation of false ideas of the position of Human Economics in relation to other sciences.

No exception can be taken to the meaning which Adam Smith attached to the term Political Economy. In the introduction to Book IV he wrote:—‘Political Economy, considered as a branch of the science of a statesman or legislator, proposes two distinct objects: First, to provide a plentiful revenue or subsistence for the people, or more properly to enable them to provide such a revenue or subsistence for themselves; and, secondly, to supply the State or Commonwealth with a revenue sufficient for the public services.’ The aim of his great work was to teach how those two objects could be best attained; but, with his habitual thoroughness, before drawing his conclusions, he first investigated the cosmopolitan laws of production and consumption affecting the human race generally. Many subsequent writers have confined their researches mainly to those general laws, which were the substratum only of his science of Political Economy; and that term is now used to include the whole science of Human Economics, of which strictly it is only a division. At the present time it is difficult to say what the term ‘Political Economy’ really means. Some writers seek to define it in a way to support in advance particular theories, of which an example is found in Professor Thorold Rogers’ notes to his edition of Adam Smith’s work. After stating that the meaning which Adam Smith attached to the words has passed away, he says:—‘It has been suggested that a better definition is found in the following: The science of those forces which set labour in motion, in so far as that labour is employed on objects which thereby acquire a value in exchange.’ This, it will be seen, is framed so as to exclude from the science all

unproductive personal services, for which so large a portion of wealth is exchanged.

Error, as well as confusion, has resulted from this loose use of terms. Adam Smith's work was written at a time when the growth of wealth was hampered by many misconceived restrictions. The corrective necessary under those conditions was greater freedom, so as to permit the saving in production resulting from free exchange. The quantities of necessities and luxuries producible per head were in this country, at the time he wrote, diminished to the country's detriment by political regulations. In the interests of this country he urged that such political regulations should be altered, so as to allow freer action to the cosmopolitan laws of production, and, at the time he wrote, the Political Economy of England and what we may call Cosmopolitan Economy both pointed in the same direction—the removal of restrictions on trade. But this was an accidental, not a necessary, coincidence. By the application of the term Political Economy to the whole science of Human Economics, all distinction between Cosmopolitan Economy and Political Economy appears to have been lost. Yet such distinction certainly exists. It is quite possible that what may be for the advantage of the whole human race may be detrimental to a particular State. As an extreme example may be cited the suggested abolition of the gambling attractions of Monaco, which would unquestionably benefit the race and economically ruin that little State. Many modern writers, however, have been contented with proving the truth of propositions as applied to the whole human race, and have assumed that they must therefore be true as applied to particular States.

While maintaining, in accordance with usage, the term Political Economy to embrace the whole science of Human Economics, we wish, in order to mark the limits of this work, to note certain well-defined divisions of the science. These are :—

1. Natural Economy which subdivides itself into—

- (a) Objective ; which, excluding human motives and human institutions, concerns itself with the operations of human faculties in satisfying human requirements. The point of view is analogous to that from which we survey the economy of bees and ants. While ignorant of the relations between individuals, and of their respective rights in the general store, we are enabled to trace out the potentialities of their faculties, their dependence on the bounty of nature, and the relations existing between production, consumption, and the increase of the species. The like view is essential to a complete knowledge of Human or Political Economy, as it shows the physical limits, within which the species works.
- (b) Subjective ; which, still excluding human institutions, is concerned with the motives which induce the species to produce. We here pass beyond the limits of investigation possible in relation to ants or bees. We do not, and probably never shall, know what induces the worker-bees in a hive to work for the community, but from introspection we can trace out the various springs of action inducing production in a human community, estimate

their relative strength, and trace the directions in which they co-act or counteract.

2. Cosmopolitan Economy, which introduces into the field surveyed by Natural Economy the human institutions of private property and exchange, and investigates the working of these institutions within the limits fixed by Natural Economy.
3. Communital Economy,¹ which investigates what institutions and regulations tend to the advantage of a particular community. This opens up an exhaustless field of inquiry, for, inasmuch as the conditions of every community vary, the political institutions and regulations best suited for each will probably vary in an equal degree. Moreover communities must not be understood to mean only States. Within the same State all interests are not identical, and what is for the benefit of one part may be harmful to another. Also two or more countries may be united by a common economic interest opposed to a third; and the economic interests of one continent may conflict with those of another.
4. Individual Economy, which marks the ultimate limit between which and Cosmopolitan Economy lie all the diverse communital economies. There is no science to be taught under this head, for each individual is a sealed book to be read by himself alone. The general tendency of human motives can be investigated,

¹ The words 'communal' and 'communistic' have acquired special meanings which have led us to adopt the word 'communital' so as to avoid confusion therewith.

and falls under the subjective sub-division of Natural Economy, but the motives and acts of a particular individual cannot be forecast.

In this book we are concerned only with the first head of the science indicated above, viz., Natural Economy under its two sub-divisions, objective and subjective.

CHAPTER II

OBJECTIVE NATURAL ECONOMY INTRODUCTORY

IN investigating Natural Economy from the objective point of view, we must, as indicated, exclude every influence traceable to human institutions or motives. Our concern is only with the physical laws controlling production and consumption, not with any human motives inducing, or human regulations organising, operations within those physical laws. We have to confine ourselves to the laws of nature on the one hand, and on the other to the potentialities thereunder of human faculties in ministering to human requirements.

In order not to transgress those limits we propose to accompany our researches under this head with frequent reference to the economy of bees. The precise standpoint we want is that of a denizen of another world unable to communicate with us, and therefore ignorant of our motives and institutions, but able to watch us as we watch hive-bees, and possessing knowledge of our faculties and their adaptation to our wants, such as we possess concerning bees. We know nothing of the motives which induce worker-bees to provide subsistence, not only for themselves, but for drones and for the offspring of the queen. We do not know whether any rights of

property or gradations of rank exist among them, but, whatever their motives or individual priorities (if any), we can trace definitely the end to which their surplus production is applied; and we can see how, in pursuing that end, they are affected by extrinsic conditions. The like knowledge of the human species is what we are concerned with in this branch of our subject.

We will recapitulate the principal facts which are known respecting the economy of hive-bees, and point out wherein they differ from those of the human race.

The requirements of hive-bees in satisfying the aims of their existence are—first, a hive or place of habitation, and thereafter, propolis, wax (to be fashioned into comb), honey, and farina. The hive, under domestication, is furnished by the apiarian. Among wild bees a hollow tree, or other place affording protection, is selected. Propolis is required to cement the interior of the hive; it is found in the requisite condition on certain trees, and the process of production consists in collecting and transporting it to the hive. Wax is the material out of which the cells, in which the honey is stored and the brood is nurtured, are constructed. By some chemistry beyond our knowledge it is elaborated by bees out of honey, and the process of production is, first, the collection and transport to the hive of the honey; and then, the manufacture thereout of the wax.

Honey, the food of the mature bee, is the staple product of the community. It is found in the nectaries of certain flowers in varying profusion, and on the leaves of certain trees in the form of honey-dew. The process of production consists in its extraction from such flowers and leaves, and transportation to the

hive. Farina, or pollen, is also found in the flowers visited by the bee, and is similarly produced by collection and transportation; it is the principal ingredient in the food of the young brood. In addition to the foregoing, small quantities of what has been called royal jelly are compounded by the worker-bees, for the nourishment of that portion of the brood destined to develop into princesses or perfect females.

The radius from the hive, within which a bee can pursue its quest for the purposes of production, is calculated by various authorities at from one to two English miles. In ordinary seasons and in fairly favourable situations, each worker-bee is enabled to produce far more than is necessary to provide for its own consumption and depreciation, i.e., for the generation and growth of a worker-bee to replace it when dead. The aim of bee life, to which all surplus production is directed, is the continuous increase of the species. The physiological possibilities of increase are almost without limit. According to Schirach, a single queen will lay from 70,000 to 100,000 eggs in a season, of which 95 to 96 per cent. result in abortive females, each of which apparently at the will of the occupiers of the hives, could be developed into a perfect female. The remaining 4 or 5 per cent. are drones or males, and, if an equal number of perfect females were reared, the possible increase in geometrical progression would be practically boundless. The only restriction on this power of increase is the limitation in the worker-bees' powers of production. Colonising, or the emigration of swarms from the hive, which is the means by which fresh centres of increase are established, takes place only when the accumulation of sufficient stores assures the continued existence of those remaining in the

parent hive. The extent of the accumulations varies principally with the character of the seasons and of the surrounding flora. The untiring industry of the worker in pursuing its end appears to be ever the same. In a favourable season and with favourable surroundings, as many as three swarms will not infrequently issue from one parent hive; as many as four have been recorded, but that would seem to mark the limit of the worker-bees' powers of production under the most favourable circumstances. Under unfavourable conditions no swarming takes place. The entire labour of the hive falls to the lot of the worker-bees or abortive females, and only a short existence in idleness is granted to the males, for the purpose apparently of ensuring the impregnation of the queen. Division of employments, or division of labour as it is called, obtains among the workers. We probably do not know the full extent to which such division is carried, but it is known that one part of the community devotes itself to the care of the brood, while another part collects and stores the honey. Apparently some complex co-operation is necessary in the elaboration of the wax.

In the following particulars human economy, from the objective point of view, resembles that of our interesting terrestrial companions the hive-bees; both are gregarious and collect in communities; both necessarily depend on natural objects for the raw material of their productions; with both the production of some objects consists of mere transportation, while other objects are extensively manipulated and their character altogether changed by the producer; the supply of the staple requirement of both (honey for bees, cereals for mankind) depends in a great measure upon cosmical causes beyond the control of the producers; the

physical powers of both are limited; in ordinary seasons both can produce more than is required for their own consumption and depreciation; with both a regular division of employments obtains in performing the necessary work of the community.

The following are important differences to be noted:—

First, the powers of production of the worker-bees are limited (1) by the quantity of suitable objects which the haphazard of nature throws in their way, and (2) by the quantity of their individual muscular force. These limitations apply also to uncivilised man, but, as civilisation advances, the limits on his powers are extended in both directions. Instead of depending upon the haphazard of nature, he is enabled to control and direct nature. His staple requirements are particular plants and animals, and, by gradations through the hunter and herdsman conditions, he has arrived at his present skill in agriculture, which enables him to direct the powers of nature to the supply of those particular plants and animals of which he has need. Concurrently he has been able to press animate and inanimate nature into his service to perform those parts of production in which force is required, so that his own individual force is mainly employed in directing far mightier forces under his control. The result of this difference is that, while under similar extrinsic conditions the production of bees per worker is stationary, the production of the human race per worker is continuously progressive.

A second great difference between the economy of mankind and of bees is found in the application of products. With bees the excess of production, beyond what is necessary for the existence and depreciation of

the worker, has only one outlet—the increase of the species: with mankind such surplus may flow in two directions—to the increase of the species, and to the improvement of the conditions of existence. Man's requirements, as well as his powers of production, are progressive; as civilisation advances his requirements become more complex and luxurious, and the surplus production is directed in part to each of the outlets indicated.

This second difference, while placing the economy of bees and mankind on a different basis, tends to neutralise what would otherwise be a cardinal distinction. Among bees the possibilities of increase are sufficient to absorb any conceivable surplus of production, but it is doubtful whether the same be true of the human race. With the great increase in the powers of control over natural forces acquired in recent years, if the conditions of existence were unchangeable, and if all individuals were imbued with the consuming desire for work which distinguishes bees, it is quite possible that production would be for a time in excess of possible human requirements. With the other outlet for excess, over-production, with temporary exceptions which we shall consider in our second book, is not possible among either bees or mankind. The boundless possibilities of increase of the species absorb all excess in the one case. The limited powers of increase and the limitless possibilities of improvements in the conditions of existence, similarly absorb all excess in the other case.

The terms following will be used in this book in the sense of the accompanying explanations:—

NATURAL OBJECTS, in relation to any particular species, are all objects, excluding the species

itself, which have not been operated upon by the faculties of the species for the purpose of its economy. Thus in relation to Human Economics, in addition to all common objects, the bees themselves and the hollow trees appropriated as hives are natural objects, while similarly in Apiarian Economics the term would include the human race and all houses, implements, and other human productions.

FORCE will be used in the sense attached to it in Natural Philosophy, i.e., whatever is capable of producing motion in a body or any change in the motion of a body.

INTELLIGENCE will be used in a special sense, partaking of both instinct and reason. We are not concerned in this work to investigate its nature, and wish only to express by it that individual mental faculty, which directs the action of the other faculties of the individuals of the species in the processes of production.

PRODUCTION is the discovery by individuals of the species of suitable natural objects, and the evolution therefrom of such things as are necessary directly or indirectly to satisfy the attainable requirements of any of the species.

PRODUCTS are the things so discovered or evolved by the processes of production.

CONSUMPTION is the using up of products by individuals of the species in satisfying directly or indirectly their attainable requirements.

CHAPTER III

THE ELEMENTS OF PRODUCTION NATURAL OBJECTS

BEFORE entering upon the consideration of the processes of production, it will be well to examine more closely some of the definitions adopted in the last chapter. Production does not mean creation. Science has taught us that nothing terrestrial is created or destroyed. In common with every terrestrial species, the human race, in satisfying its attainable requirements, can only utilise the inherent properties of natural objects. Reverting to our interesting fellow-creatures the bees, we find with them a faculty existent in the individuals to discover and transport the natural objects required—honey, propolis, and pollen—and a knowledge similarly existent of the inherent properties of these natural objects, which enables them to elaborate therefrom the products wax and royal jelly. They thus only utilise and direct the inherent properties of the natural objects, which they neither create nor impress with such properties. We may safely conclude that, unless nature provided without their aid the honey, propolis, and pollen, the hive-bees could not exist, and their intelligence as a species in relation to production begins and ends with the knowledge of, and the faculty of utilising, certain inherent properties of these three natural objects. Production in relation to

humanity does not differ in kind but only in degree from that of bees. Human intelligence reaches farther back, and instead of requiring like bees that, as a necessity of existence, nature shall provide unaided the staple articles ready for consumption, it is enabled to pierce through the composition of such staples, and to place the constituent parts in such relations that the staples shall be evolved. We may regard cereals to fill a similar place as a staple in human economics, to that which honey occupies in the economy of bees. But the more penetrating intelligence of humanity has discovered that cereals are compounded of certain elements found in the soil, joined to certain other elements found in the atmosphere. It has also discovered that, if a living seed of a cereal be placed in the soil under certain conditions, it will germinate, and evolve from the soil and air a plant bearing large quantities of seeds similar to the germinating seed. But, although the field is wider, the boundaries limiting human intelligence are as fixed and impassable as those limiting the intelligence of bees. The nitrogen, carbon, hydrogen, and oxygen entering into the cereals cannot be created, nor in the present state of human knowledge, has any approach been made towards impressing an inorganic object with the germinating property of the seed.

Human intelligence, in relation to production, has extended only in the direction of more complete knowledge of the inherent properties of natural objects. The principal physical and biological properties have long been known and utilised. For ages the human race has known, e.g., that iron is hard, that wood is soft, that iron could be used to cut and fashion wood, &c. The physical and biological properties are

utilised in production in many ways. By placing natural objects with diverse properties in the necessary relation to each other, complex products, such as cereals, clothing, animal food, &c., are elaborated, or sometimes a needed simple product is evolved from complex natural objects, as in the extraction of metal from ores. A knowledge of the chemical properties of natural objects, after slow groping progress through many ages, has, in the last and present centuries, rushed forward with giant bounds, and, in conjunction with electric science, has so extended the field of production, as almost to revolutionise the conditions of civilised life. In no direction, however, has humanity passed beyond the limits imposed upon bees and all forms of terrestrial life. All its production is brought about by utilising and directing the inherent properties of natural objects.

Analysing production from the point of view of Natural Economy it is found to consist of three elements, defined in the last chapter, viz., suitable natural objects, force, and intelligence. These and only these elements enter into all forms of terrestrial production, except that the meaning attached in our definition to the term intelligence would have to be extended to include the almost passive faculty of appropriation of suitable natural objects by plant life and the lower forms of animal life. Guiding our investigations by apiarian economics, we find that a community of hive bees requires first to produce a habitation and food. In their natural state unaided by man, the production of a habitation consists, first, in the selection of a hollow tree or other suitable place, for which they need the natural object, the tree or other sheltered place, the force to search, and the

intelligence to select. The next step, the cementing of the interior with propolis, requires similarly the natural object, propolis, the force to transport and work it, and the intelligence to find and suitably apply it. Similarly the production of the comb, the honey, and the farina can be resolved into the like elements. It is requisite to divide the labour of the bee into force and intelligence, because the two are not necessarily united, and are distinct in their operations. If a worker-bee be disabled by an injury to its wings, it cannot produce, because it is deprived of one element, force, although the intelligence remains; if the injury be repaired, the wanting element is restored and production is resumed.

Tracing out in Human Economics the elements entering into the production of a house, for example, it is found to involve the previous production of all the simple materials—stone, bricks, sand, lime, timber, &c. The natural object stone is found in some suitable formation, and force is requisite to quarry and transport it. This force may be obtained from the muscular power of men, or from some extrinsic source, as a natural fall of water, or the stored-up energy in coal. But, from whatever source it be derived, the force will not produce building stone, unless intelligence select suitable beds to work, and direct the force to the natural joints or cleavage of the stone. The transport of the stone to the building site may similarly be accomplished by manual or extrinsic force, but intelligence is equally necessary in either case. The like analysis is applicable to the production of the other simple materials, to the dressing of the stones, the mixing of the sand and lime to form the mortar, &c. All these and similar processes, however,

will not produce a house, but only an agglomeration of building materials. The skill or intelligence of the architect is further necessary, and this may be obtained from a man who simply traces his plans on paper, and has nothing to do with the actual construction of the house. In the actual construction the unskilled labour, such as hoisting the materials, &c., may be performed by labourers, or by extrinsic forces acting upon suitable machinery.

All other processes of production, if similarly analysed, show that intelligence, in addition to force, is requisite to produce from a natural object. The distinction between force and intelligence in Human Economics is of prime importance, as the increase of products *per caput*, which is a principal object of human communities, is mainly brought about by the substitution of extrinsic force for the muscular force of the species.

The suitable natural objects entering into apiarian production are only four in number, viz., a sheltered habitation, propolis, honey, and pollen, and the few products of the community are limited by the quantities of these natural objects found within the radius workable from the hive. Production in relation to Human Economics is so complex, the number of natural objects utilised is so great, the powers of transport are so extensive, that we shall at this point get slight assistance from the observations of apiarians. It will be useful to consider some of the natural objects entering into the composition of a simple product such as bread. Bread is immediately resolvable into water, yeast, and flour. The latter is itself a product from wheat, which also in turn is a product built up, under the direction of human intelligence, partly from the

constituents of the soil and partly from the constituents of the atmosphere. Yeast is similarly a product, evolved from vegetable products (barley and hops), which have also been built up from the constituents of the soil and atmosphere. In the process of baking; wood or coal is consumed, and also some portion of the iron of which the oven is constructed; the iron has been produced by extraction from ironstone. The following natural objects thus are ultimate ingredients of bread: Water, constituents of the soil, constituents of the atmosphere, wood or coal, and ironstone. This is not a complete analysis of the natural objects entering, in a civilised community, directly and indirectly into the production; but it is sufficient for our present purpose, which is to fix certain types of natural objects. If any human product be resolved into the natural objects, as they existed before their utilisation in human production, they will be found to fall into one of the following classes:—

1. *Objects which, without human effort, are replaced immediately they are consumed.* The most widely spread of this class of natural objects are the constituents of the atmosphere. These enter largely into vegetable products, yet production is never limited or hampered by the want thereof, as, immediately any portion is abstracted by the growing plant, it is replaced without human interposition, at the exact spot whence it has been abstracted. Sea water and the water of great rivers are other examples of this class, for, whatever conceivable quantities might be consumed, the supplies available for consumption at the spot of appropriation would continue

undiminished. This class we will call Undiminishing Objects.

2. *Objects which, without human effort, are replaced when consumed, but not immediately.* The constituents of the soil consumed in the evolution of vegetable products are examples of this class of natural objects, as are also small streams of water, and many wild forms of vegetable and animal life. If time be given, the recuperative powers of nature restore, without human aid, the equivalent of what has been taken away. The time required varies with different objects; the constituents of the soil are replaced after a comparatively short rest; for forest trees many years may be necessary. This class we will call Replenishing Objects.

3. *Objects which, when consumed, are not replaced.* Minerals are convenient examples of this class. To adopt a commercial simile, nature has ceased manufacturing this class of objects and supplies us from her stock; when we once abstract any portion of these from her storehouse, they are never restored at the place of abstraction; if we require other supplies, they must be sought elsewhere. This class we will call Unreplenishing Objects.

All natural objects do not sort themselves so readily into one or other of these classes as the examples mentioned. Some, although strictly belonging to the second class, may be so quickly, although not immediately, replaced, as to be more closely allied to the first class, in relation to Human Economics. Water from surface wells in many

localities, and seaweed brought by the tide, may be cited as examples. Trees requiring centuries for adequate growth, although strictly belonging to the second class, are economically more closely allied to the third class. It is also conceivable, although we cannot recall an instance, that some mineral in small demand may exist in one particular place in practically inexhaustible abundance. Such a natural object, although belonging strictly to the third class, would, in relation to Human Economics, have the characteristics of the first class. This modulation of class into class will not bar the generalisations which we shall found on this classification, as physiological science is not barred by the difficulty of drawing the line between the vegetable and animal kingdoms. We shall see that each of the above classes affects differently the phenomena of human production. The conclusions we shall draw will be based upon the differences in the types, and the only difficulty arises in deciding to which class a small number of natural objects is, in relation to Human Economics, most closely allied.

Each and all of the natural objects entering into products are practically, in relation to Human Economics, inexhaustible. This is manifestly true of the first of the above classes. As regards the third class, only negative evidence is available to support the proposition, but that is sufficient. Humanity has not come to the end of the supplies of any natural object of this class, and there is nothing to indicate that such end is practically nearer now than it has been at any time in human history. The term inexhaustible must be understood strictly in a physical sense, and, though inexhaustible quantities of all objects exist, they

are not necessarily available under the conditions of Human Economy. In relation to bees, there no doubt exist inexhaustible stores of honey, but, as mentioned in the last chapter, under their economic conditions the available stores appear to be limited to a radius of two miles from the hive. Whatever the actual limit may be, it is clear that, at some degree of remoteness from the hive, the bees would consume as much honey in maintaining their faculties while journeying to and fro, as they could transport to the hive. At that point the continued existence of a large community, which appears to be a necessity of bee life, would become impossible, and thus, though a large store of honey might be available at a distance of, say, four miles from the hive, it would be economically unattainable. Similarly in Human Economics, gold, to take an extreme example, is a natural object universally desired, yet obtainable in only comparatively small quantities. Nature's stores of gold are widely spread and inexhaustible, but difficult of access, and, in the conditions of human existence, there is a point of difficulty, varying at different epochs, at which gold though physically is not economically attainable: the determination of this point will fall for consideration in our second book. The second class of natural objects, i.e., *those which are replaced when consumed, but not immediately*, may establish exceptions to the general rule of inexhaustibility. Certain products are obtained only by the slaughter of wild animals. The replacement of these animals depends upon the exercise of the reproductive faculties of the adult animals who escape slaughter. Such reproduction, to effectively replace the animals appropriated, must be on a larger scale than the slaughter for the purposes of production,

as the young of all animals are subject to accidents and to destruction by the attacks of other species. When the slaughter of the adults is such that the remnant cannot reproduce on the requisite scale, the whole of the animals appropriated will not be replaced, and, if the slaughter be continued, the whole species may become extinct and the supplies be exhausted. Examples of a tendency in this direction are now occurring as regards sealskins and ivory. The exhaustion of the natural objects (seals and elephants) will, however, be a voluntary act on the part of humanity, and will not be allowed if supplies of the particular natural object be keenly desired. The possible exception to the general proposition is of minor importance, and is one we can disregard in our further investigations.

Economists have been disposed to consider land a limited natural object, and likely within a short period to prove insufficient for the support of the increasing human species: as many economic problems gather round this apprehension, we will shortly consider whether it be well founded. The term land is applied in law to the surface of the earth and to what we may call the 'hinterland' beneath it, extending to the centre of the earth. The ownership of the surface carries with it the ownership of such 'hinterland,' and also of the space above such surface, contained within lines prolonged indefinitely, drawn at right angles to the lines of surface boundaries. This legal conception has been generally adopted by Economists and has led to confusion. In relation to Human Economics land, as thus defined, embodies five distinct entities, viz.:—

1. The storehouse of the natural objects, metals and minerals, utilised in production.

2. The foundation on which habitations and other of the more permanent products are erected.
3. The storehouse in which are contained some of the constituent parts of vegetable products.
4. The 'fixed plant' whereby vegetable products are evolved from their constituent parts.
5. The 'distillery' by means of which such constituent parts, when consumed, may be replaced from the atmosphere.

In the last two heads we have, in order to save cumbersome circumlocutions, used terms borrowed from commercial life. For our present purpose we may combine the heads 3, 4, and 5, and consider them as embodying the use of land in agriculture. The natural objects, metals and minerals (No. 1 above), stored upon and under the surface of the land, fall into the third of the classes of natural objects, and we have examined above the grounds for regarding them as physically inexhaustible. Land appropriated as the foundation of erections (No. 2 above) also falls within the third class of natural objects; the consideration of a few statistics will show its practical inexhaustibility in this character. We may safely assume that the standard of existence in the United Kingdom is as high as in other parts of the world, and that it is considerably higher than in most. If we see what proportion of land has to be abstracted from agriculture in this country, to become foundations for habitations and other permanent products (such as factories, roads, railways, canals, &c.), we shall ascertain what is required for a community in the highest stage of civilisation whose number is known, and we can calculate what would be necessary for the whole world, not as it exists, but if raised to an equal degree of civilisation.

The total acreage of the United Kingdom is about 77,000,000 or 121,310 square miles. Of this, 17,000,000 acres are not available for production, being mountain, moorland, bog, &c., leaving about 60,000,000 acres, which, apart from appropriation for other objects, would be available for agriculture. The total acreage under cultivation in the year 1900 was 47,300,000; deducting that from the previous figure it leaves 12,700,000 acres appropriated, in other ways than agriculture, for the wants of a highly civilised community, numbering in that year about 41,000,000. Taking the whole population of the world at the present time at 1,800,000,000, it follows that an area of about 558,000,000 acres would provide all the land required to be appropriated for non-agricultural purposes for the whole inhabitants of the world, even if raised to the degree of civilisation existing in this country; 558,000,000 acres would represent less than one-third of the habitable area of Europe alone.

Having regard to the vast uncultivated territories of the world and to the low point of cultivation of much that is utilised, it is certain that the land available for agricultural purposes (Nos. 3, 4, and 5 above) is not within measurable distance of exhaustion. The fears of many of the old economists on this head have had their foundations destroyed by the discovery of modern means of transport.

CHAPTER IV

THE ELEMENTS OF PRODUCTION—FORCE

IN relation to the second element of production, force, Human Economy diverges completely from that of other terrestrial species. As stated in the second chapter, with all other forms of life the only force available for production is the muscular force of the individuals of the species. (There are some possible slight exceptions to this rule, but not of sufficient importance to be noted; the utilisation of the labour of another species by slavemaking ants is a remarkable instance of a non-human species employing extraneous force.) Except in so far as evolution in the course of ages develops a new species, production *per caput*, in each succeeding generation, is restricted by the fixed limited force of each individual. Doubtless when the human race first appeared production was similarly limited, and there are now existing barbarous tribes who, in this respect, have progressed little, if at all, from the probable original state. With civilised man muscular force is still applied directly to acts of production, but generally in inverse proportion to the degree of civilisation, and such force is mainly employed in controlling and applying to production immensely greater forces, which his intelligence enables him to utilise. A research into the history of the employment of extraneous force, and its connexion with the progress

of civilisation, would afford matter of much interest, but it would be outside the purpose of this work, and we shall therefore only seek to classify the forces, which, in the existing state of civilisation, are employed in production. These fall into three classes, viz. :—

1. The muscular force of the species, to which we have just referred, and which we will distinguish as 'Human Force.'
2. Immense forces are available for production by the operation of cosmical causes. Examples of this class are the wind, waterfalls, running streams, and tides. In all these cases the force is actively at work, and, if not utilised, simply runs to waste. The force resident in the rays of the sun also falls into this class, and, when we attain to a more complete knowledge, we shall doubtless find electric force generated cosmically available for production. The characteristic of this class of force is its existence in active operation without human effort, and we will distinguish it as 'Cosmic Force.'
3. In the surrounding natural objects immense forces lie latent, which human intelligence is able to make active. The greater portion of the forces hitherto used in production falls under this class. It includes the muscular force of draught animals, the force generated from coal, the electric force generated by the action of acids upon metals, &c. Its characteristic is that it is a product (see definition), and as such resolvable into the same elements—Natural Objects, Force, and Intelligence—as any other product. We will distinguish this class as 'Produced Force.' The natural

objects entering into its production may be of any or all the three classes noted in the last chapter. Wood and coal, for example, are storehouses of force brought into operation by their combustion. Wood, if grown for the purpose, is a product, into the composition of which undiminishing objects (some of the constituents of the air) and replenishing objects (some of the constituents of the soil) enter; if obtained from clearances of primeval forests, it partakes of the character of an unreplenishing object. Coal is an unreplenishing object. The force entering into the composition of a produced force may also be any one or more of the three kinds we have indicated. From a physiological point of view, it is possible to connect the muscular force of the species with the food consumed, and in this sense to consider that also a produced force. We mention this to disregard it, as it leads only to a profitless circle of reasoning. In the same way, the muscular powers of bees might be traced back to the honey consumed by themselves and their progenitors. The chain of acts involved in the economy of a species is complete when a product is consumed in directly satisfying any individual requirement. If the individual put forth the force sustained by such consumption for fresh acts of production, that is the commencement of another chain.

Occasionally acts of production are necessary to utilise and maintain a cosmic force. Examples of this combination are seen in the construction and

continuous repair of a mill dam, and in the banking up of tidal waters, to utilise their gravitating force when the tide has receded. With such exceptions, of which there are not many now, but which probably will be more numerous in the future, the three types of force noted in this section are well marked in all acts of production.

The different forces entering into Human Economics vary greatly as regards their mobility. In production it is necessary to apply the force to the natural object, and, to that end, either the force must be moved to the natural object or the natural object to the force, or perhaps each may be moved towards the other. Human force is mobile, but not universally so. Apart from economical limitations mentioned below, conditions of climate and of accessibility may prevent the transportation of human force to the site, where, if available, it could be usefully applied. Cosmic forces are for the most part immobile, and can only be utilised at or near the spot where they exist. Produced forces are generally the most mobile; in fact, their mobility is the chief property which prompts their production. Draught animals have for many centuries been produced, because their force can be readily transported, but the most mobile force hitherto extensively used in production is that generated from coal. In this mineral intensely concentrated force lies in a small compass in a latent state, and these conditions enable the force to be readily transported without leakage. Doubtless other repositories can be produced, such as liquefied air and oxygen, which contain greater forces in smaller bulk and weight than coal, but, up to the present, the application of these to production has been barred by

economical limitations. Probably the most important factor of future progress in Human Economy will be the mobilising of cosmic forces. In a physical sense all such forces are mobile now, by conversion first into electric force, which, by means of conductors and secondary batteries, can be transported anywhere, but the practical employment of these methods is also barred by economical limitations.

The cosmic forces, which are running to waste unutilised over the earth, are practically inexhaustible. The winds, tides, rivers, and waterfalls in the various parts of the earth together represent an aggregate of force in continuous active operation, compared with which the forces of all kinds actually utilised are an insignificant fraction. The immense forces in operation in the flow of any considerable river, continuously repeated in every few yards of its course; the power dispersed in the ebb and flow of the tide, in a comparatively small river like the Thames; the concentrated energy still running to waste at the Falls of Niagara, and repeated in the rapids below the falls; the great forces of the winds—reflexion on these phenomena will convince the reader, that the cosmic forces, in relation to human production, are as inexhaustible as the atmosphere or the waters of the ocean.

Similarly, produced force is also inexhaustible, being evolved from natural objects, the inexhaustibility of which we have indicated in the last chapter; but this form of force is also subject to the economical limitations as regards its mobility, which we will now consider.

The economical limitations on the theoretical mobility of all forces, for the purpose of production in Human Economics, are similar to those which are

imposed on bees, by the conditions of their existence, in regard to honey collection. To render such forces economically mobile there must, in commercial parlance, be 'a profit on the transaction,' and, to that end, the quantity of force transported to the productive *locus in quo* must be greater than that of the forces expended in its transport. To illustrate this, let us suppose production proceeding by the aid of native human force in a torrid district, with a climate unhealthy and enervating for Europeans. Let us further suppose that native human force cannot be obtained in sufficient quantities, and that it is proposed to transport thither human force of European origin. The Europeans not being acclimatised, it might be necessary to utilise the native human force to transport them to the site of production, and subsequently to transport for their sustenance the various requirements of civilised races, which the natives do not need. Arrived at the site, the Europeans might, in consequence of the climate, be unable to put forth more than a fraction of their muscular force. Under such circumstances it is conceivable that more force would be expended in the transport of the Europeans and of their necessities, than would be obtainable from them on the productive site, and that the native human forces would be more economically employed directly upon production, than indirectly in transporting the European human force and necessities; so that, under the supposed circumstances, such force, although theoretically, would not be practically mobile in relation to Human Economics. (It must be remembered that the hypothesis only deals with transport for the purpose of force; the transport to the site of production of Europeans, for the purpose of supervision, is connected with the remaining element of

production, intelligence, which we shall consider in the next chapter.) Similar limitations contract the mobility of cosmic and produced forces. As stated above, a cosmic force, such as a waterfall, may be utilised to generate electricity, and so to charge secondary batteries for transport to a productive site. In these circumstances force would be expended in constructing and maintaining the electric plant, and in conveying the secondary batteries to and from the productive site. At a certain distance the force so consumed in conversion and transport would exceed the force transported, and, at that point, the force of the waterfall would cease to be economically mobile. For like reasons the produced force, coal, loses its mobility at a determinable distance from its place of extraction.

Wherever the force expended on transport is greater than the force transported, such transportable force becomes economically immobile, but the converse is not necessarily true, viz., that, where such force expended in transport is less, the transportable force is economically mobile. The third element of production, 'intelligence,' also enters into the problem, and its consumption may render the transport unprofitable.

Apart from the utilisation of additional force, savings are continuously affected in the consumption of forces usually applied to production. This has been accomplished, as regards coal, by the adoption of improved methods in the generation of steam, and particularly by the more direct application of its latent forces in driving gas engines. A like saving follows, in relation to human force, by the application of the force of each individual to one special and repeated act of production. This does not include the whole gain resulting from what is known as division of labour,

which effects principally economies in the consumption of intelligence, and in that respect will be considered in the next chapter. The purely muscular part of the human frame possesses a power of adaptation to the work to which it is applied. Every distinct action utilises certain special muscles, and, when such muscles are continuously in active operation, they become abnormally developed. So far as the higher productive power of the expert craftsman, over the unskilled labourer undertaking similar work, is due to the quickness and ease of his muscular acts, it is a saving effected in the application of force to production. By division of labour, a further prevention of waste of human force results from the saving of time, otherwise lost in passing from one employment to another. A like result is traceable in relation to bees, of whom some devote themselves to the care of the brood, while others are engaged in the quest for honey, with obvious economical advantages. We do not know sufficient of bees to judge whether, by division of labour, they also acquire special muscular dexterity.

CHAPTER V

THE ELEMENTS OF PRODUCTION—INTELLIGENCE

THE third element of production, intelligence, we have defined as that individual mental faculty, which directs the action of the other faculties of the individuals of a species in the processes of production. The entire mentality of most forms of animal life does not apparently embrace more than this, but the human species possesses another mental faculty, which greatly affects production, but is not an element. This is the faculty of invention, by which mankind are continually adding to their individual powers of production; it is quite distinct from the intelligence they possess, akin to that of bees, which is a necessary element in all production. It is conceivable that mankind might be deprived of this faculty of invention, yet their intelligence would enable them to utilise, in future production, all existing aids attributable to its past exercise. For want of a single term sufficiently definite, we shall use the words 'inventive faculty' to denote it, and shall continue to employ the word 'intelligence' to distinguish the element of production, in the terms of our definition.

The individuals of every terrestrial species and variety appear to possess the intelligence necessary for the production of what is required for their sustenance, including, as we have previously said, in the term

intelligence the apparently passive powers of absorption, possessed by plants and the lower forms of animal life. By closely watching the habits and requirements of other forms of life, the human race has acquired sufficient knowledge to produce for them, but otherwise, with slight unimportant exceptions, the general rule may be stated, that the intelligence necessary to produce for any species exists only in the individuals of that species. Confining our attention to Human Economics, we may predicate that the intelligence necessary for production exists only in the individuals of the human race. The mental faculties of certain animals, such as horses, elephants, and dogs, are employed, to a small extent, in aid of human intelligence in production; a well-trained sheep-dog, for example, will enable one man to drive sheep as effectively as three men without the aid of a dog. But the dog only economises the intelligence; he does not replace it. The places to which the sheep must be driven, for the purposes of production, are determined by human intelligence alone, and, under direction of its master, the dog accomplishes work which otherwise would call for a further consumption of intelligence; but the dog's mental faculties alone, unless so directed, will not result in production. The total sum of such aids to intelligence is, moreover, in relation to the mass of production, a negligible quantity.

It is important to keep in view the fact that the element intelligence is found only in the individuals of the species, as it follows that intelligence is the only limited element in production. Natural objects, we have seen, are unlimited; though human force is limited, the forces which can take its place are unlimited; but no substitute can be found for human intelligence.

When production is accomplished by directing cosmic and produced forces, it would appear that a higher degree of intelligence is generally required, than is called for in the direction of human force. This is not deducible from the nature of cosmic and produced forces, but is a fact noticeable in the history of the use of those forces in production. There are some instances of the application of cosmic force in simple forms, as in the utilisation of the drying properties of the wind and sun, which require no higher intelligence than the simplest human action. But the methods by which these forces have usually been utilised in production are such as to require a higher intelligence.

Such utilisation has been brought about mainly by means of complicated machinery, constructed to work as automatically as possible. In order to understand the nature of the higher intelligence required in directing cosmic and produced forces, we must examine here shortly the relations of the inventive faculty to production. All species below man appear to be limited, in their relations with the outer world, by their common inherited powers, and, within human memory, none of them has passed beyond its original limits. The doctrine of evolution, however, teaches us the necessity of the qualification 'within human memory.' The complex organisation of many existing species is known to be due to inherited variations, of a nature to benefit the individual. Such variations endow the individual and its descendants with fresh powers; fresh beneficial variations accumulate on the original variety, conferring additional powers, until ultimately the resemblance between descendants of the same parent species becomes as remote, as that between a bird and a reptile.

The inventive faculty does for man in a few years, what natural selection accomplishes for other species only after countless ages. The acquisition of the power of rapid transport by birds has been the result of inherited variations, extending over accumulated epochs; a like and almost co-extensive power has been conferred by the inventive faculty on man, in a comparatively infinitesimal period. The power of traversing oceans possessed by whales must have been as slow of growth as that of the birds' power of flight, but a like, and fully as extensive, power is now possessed by man. With his present discovered powers man is, in relation to the outer world, as distinct from primeval man, as an existing highly organised species from its lowly progenitors. Every new invention extending his powers makes him, in his relations with the outer world, a fresh variety, and the accumulation of these over centuries almost entitles him to rank as a new species. As his powers have increased, his wants, and the methods of supplying them, have become more complex; just as the requirements and processes of a highly organised species are more complex than those of simpler forms. The intelligence of each species, whether high or low, is sufficient for itself, and similarly the intelligence of primeval man and of existing barbarous races must be regarded as sufficient for their requirements; but, in the same sense in which we should regard the intelligence of the feline genus as superior to that of the molluscs, so we must look upon the intelligence of civilised man, directing his complicated processes of production, as superior to the intelligence of the cave-men, who directed only their own muscular forces.

The difference is, however, not very great; it must

be remembered we are speaking only of the element of production, intelligence, according to our definition, excluding the inventive faculty. The daily work of our agricultural labourers does not require intelligence greatly above that of savage races. The connexion between our agricultural labourers and the more complicated processes of manufactures is established by the large numbers of peasantry, who are annually drafted to our large towns and become artisans. Superior intelligence is doubtless required by the latter in exercising their vocations, but it is probable that the higher intelligence necessary could be acquired by most existing races.

Whether or not the capacity for its acquisition be inherited, this higher intelligence, required for the direction of cosmic and produced forces utilised in the present state of civilisation, cannot be put forth until after a process of education. The intensity and duration of such education varies with the different departments of production. The degree of intelligence required for the direction of some extra-human forces may be acquired in a few months; in others, such as the higher branches of engineering, the necessary education is the work of years. To acquire this higher intelligence thus requires the consumption of intelligence, and, as it is the one limited element of production, the education of such higher intelligence reduces the immediate production, with the view of ultimately increasing it. The consumption is generally two-fold: the intelligence of the instructor, and the intelligence of the pupil. In some departments, the pupil is educated by watching and aiding the instructor when engaged in actual production, and, in such cases, the intelligence of the instructor is not withdrawn from

production, and is not, therefore, consumed in educating the pupil. But in the higher arts it is found to be economical that professors should withdraw partially or entirely from production, in order to apply themselves to the work of education; and this involves a consumption of intelligence, which would otherwise be available for production. Further, the experience of civilised nations has led to the belief that production is advanced ultimately by instructing the younger population in the elements of general knowledge, whereby they become better fitted for the reception and utilisation of the special knowledge, required to educe the higher intelligence needed in the direction of non-human forces. To this end, a section of the community is withheld from direct acts of production, and its intelligence is wholly consumed in imparting such general knowledge. The intelligence of the pupil is consumed similarly, by withholding him wholly or partly, during the educational period, from direct acts of production. The intelligence of the young of the human species is at an early age sufficient to direct simple acts of production, but, as indicated above, it is deemed advantageous to abstain from so applying it, and to consume it instead upon itself, in increasing its ultimate utility. We may note here that, concurrently with this consumption of intelligence in educating the higher intelligence, there is a consumption or waste of the human force of the individuals engaged thereon, but the aggregate of the human force so consumed is infinitesimal in relation to the forces applied to production, and may be disregarded.

Intelligence, in proportion to the number of the species, cannot be quantitatively increased, and any saving which can be effected in its consumption is,

therefore, of first importance in relation to human production. The effect of such saving is practically the same as a quantitative increase. One individual cannot be endowed with a two-fold intelligence, but, if the forces directed by him in production can be doubled, the economical result is the same as if his intelligence had been duplicated. The means by which intelligence is saved in production are principally the three which have already been indicated, viz. :—

1. The training of certain domesticated animals, who, in some of the simpler processes of production, afford efficient aids to intelligence. Dogs and elephants rank foremost among the species thus utilised. Dogs, as aids to the farmer, the drover, the sportsman and as guardians of property, perform work which would otherwise call for the consumption of human intelligence. Elephants, also, in stacking timber logs and in similar work, bring to bear faculties whereby much human intelligence is saved, which would otherwise be required in directing force. Horses, and other draught animals, economise human intelligence, but to a much smaller extent; they are principally utilised as mobile forces.
2. The employment of automatic machinery. The development of the mechanical arts has enabled the human race to copy by machinery nearly every movement of which the human hand is capable, and, wherever a continued act of production involves a recurring sequence of movements whether similar or differing, the mechanician is generally able to make his machine exactly copy such movements,

and take them up in regular order. The development of the automatic principle in machinery has been slowly progressive. All machines by which non-human force is applied are more or less automatic, but the early simpler forms bear slight likeness to the methods whereby intelligence is now economised. The modern weaving loom aptly illustrates the extent to which the automatic principle can be applied. An ordinary pattern on a Jacquard woollen loom would include a large number of threads in the warp, arranged in series of colours, each of a varying number of threads; and a number of threads of various colours for the weft. In order to develop the pattern correctly, exactly the right threads must be separated in regular succession in the warp, and, while so separated, the correct colour of weft thread must be thrown between the separated warp threads: immediately thereafter the weft thread must be beaten against the preceding thread; the woven cloth must wind itself on, and the unwoven warp unwind itself from, a beam, both movements being at accurately prescribed though differing rates. Each weft shuttle must be thrown at such a speed that it will unwind without breaking the thread, and will slide without concussion into its box, after it has crossed the warp. It is difficult to estimate the quantity of intelligence necessary for such a piece of work, apart from machinery. To lift each time exactly the right threads of warp; to select the shuttle holding the right

shade of weft; to throw the shuttle with the exact velocity required; to beat up the weft thread each time with an unvarying prescribed force; to let off the exact quantity of unwoven warp, and to take up the exact quantity of woven cloth; to accomplish these movements would require the co-operation of many units of intelligence, who might succeed with practice in throwing four or five shots of weft threads per minute. A modern loom enables the work to be carried on perfectly by one weaver, at the rate of upwards of one hundred shots per minute.

3. The appropriation of individuals to special and repeated acts of production. The resulting saving of intelligence is the main advantage derived from division of labour, which is a favourite theme of political economists, and has been amply illustrated by many writers. The saving appears to be effected in three principal ways:—

- (a) Intelligence, like human force, appears to possess an inherent power of adapting itself to the performance of acts continuously repeated. Apparently acts, which when first undertaken require the concentrated intelligence of the performer, are, after frequent repetition, controlled mainly by some inferior portion of the mentality, and are only supervised by the higher portion, which is almost free to concern itself with other matters. These lower faculties work with less hesitancy, and consequently with greater speed, so that, when an act of production has been repeated

sufficiently to allow its control to be thus relegated, successive acts are completed in shorter time, and the produce per unit of intelligence is increased. Such appears to be a partial explanation of the dexterity acquired by practice, but the truth of the fact is independent of the correctness of the explanation, and is daily proved in our manufactories.

- (b) The higher intelligence required for directing cosmic and produced forces has become so specialised, that, in many instances, an individual can be efficiently educated only for one department or division. The inefficiency of the Jack-of-all-trades has become a proverb. The superior productive power of a master of some art, over the man with some general but less complete knowledge, is a saving (or increased efficiency) of intelligence, resulting from division of labour.
- (c) The principal saving is effected in respect of the loss of time, which otherwise must take place, by continually changing from one employment to another. The intelligence available for production is limited by the duration of the working capacity of individuals, each of whom has only so many 'years of work' in him. If his intelligence be wasted, or be not utilised for production at the moment in which it is available, so much of it is forever lost.

CHAPTER VI

THE ELEMENTS OF PRODUCTION IN OPERATION

It is evident that human powers of production are limited, as otherwise all the requirements of every individual would be satisfied, which we know is not the fact. The investigation of the elements of production in operation thus branches out into two nearly distinct inquiries, viz. : What are the limits on the productive powers of humanity? and, To what particular products will those limited powers be applied?

Examining a hive of bees we may note three possible economic conditions, viz. :—

1. In which the production is insufficient to maintain the hive, and the numbers decrease.
2. In which the production is just sufficient to maintain the hive, and the numbers remain stationary.
3. In which the production is more than sufficient to maintain the hive, and the numbers increase.

The second condition marks a state of productive equilibrium, and implies that the producers must, during their short lives, produce sufficient to maintain themselves while working, and also to maintain the queen and sufficient pupae and drones to ensure the growth of a brood equal in number to the population of the hive. In commercial language, they must produce enough to maintain themselves and provide

for their own depreciation. If production fall below this, the first condition will ensue; if it rise above, the third condition results, and the whole surplus production is directed to the increase of the species. These three conditions obtain in relation to human communities, but, if the third condition exist, i.e., if the production be more than sufficient to maintain the community (including in maintenance making good depreciation), three possible variations may ensue, viz.:—

1. The standard of existence may remain the same, and the surplus products be wholly applied, as with bees, to the increase of the species.
2. The number of the community may remain constant, and the surplus products be wholly applied to improving the standard of existence.
3. The surplus products may be applied concurrently, partly to increase the community, and partly to improve the standard of existence.

With bees and humanity alike it is obvious that the final objects of the hive and the community can only be attained when the third condition above noted exists, i.e., when the production is more than sufficient to maintain the hive or community. What quantity is sufficient for such maintenance must vary with the number of the hive or community. It follows therefore that, though the total production of a hive or community might be increased by an increase of population, the result might be the reduction or annihilation of the excess available for its ultimate objects. The number of bee-hives in a district might be increased to such an extent, that the quest for honey became much more laborious; the gross quantity

of honey collected might, and probably would, be greater than with a smaller number of hives, but the surplus stored would be less relatively to the number of workers, and might be absolutely less, or even nil; the whole of the production might be required for the immediate sustenance of the workers. In that case the ultimate object of bee existence—the multiplication of the species—could not be attained, and the economical condition of the larger number, though with greater production, would be disastrous. Similarly in a human community, an increase of production, consequent on an increased number of workers, might result in reducing or absorbing the surplus available for the increase of the species and the improvement in the conditions of existence, and the community, as the direct consequence of its increased production, might approach or actually descend to the second economical condition mentioned above.

It will be convenient here to define the meaning we affix to some terms, which will be frequently used in this and subsequent chapters.

GROSS PRODUCTS are the total results of acts of production.

NET OR SURPLUS PRODUCTS are gross products, minus what is necessary for the existence and for making good the depreciation of the producers.

SURPLUS RATIO is the proportion which net products bear in any hive or community to gross products.

In satisfying the wants of human communities some products are evolved in large quantities; of others only comparatively small quantities are needed. We shall employ the phrase—

SCALE OF PRODUCTION, to mean as applied to commodities the extent of their production.

Where the scale of production of any product is large, the production may be carried on by each individual producing for himself, or by a section of the community producing that particular product for the whole community, or partly in the former way and partly by a section producing for the sections other than such individual producers. This concentration of production, which is the means by which the advantages of division of labour are secured, we shall call *intensity of production*. A high degree of intensity is possible only with such products as are produced on a large scale, but production on a large scale may exist with only a low degree of intensity.

In analysing the phenomena of production it is necessary to remember that its methods are so complex, that the definite effect of any cause can rarely be traced. Many causes are in co-temporaneous operation, some in direct or partial co-operation, others in direct or partial opposition. Ascertained effects are known to be the resultants of these several causes, but it is generally impossible to determine to what extent any cause has contributed to or modified any effect. Probably no single cause in Human Economics is ever allowed its full natural effect, and the result of its free operation can only be estimated theoretically. We shall therefore speak of causes as *tending* to certain results, and the theoretical effects we shall call *tendencies*. It will be necessary at first to exclude from consideration the operations of the inventive faculty; most of the following propositions are predicable only of a hypothetical condition, in which the inventive faculty, having carried us up to a certain degree of civilisation, has ceased to operate.

It will be obvious, from what is stated above, that

the happiest economical condition obtains when the potential surplus ratio is greatest, not necessarily in a human community, that all the possible surplus products may be evolved, as the alternative object of improving the conditions of existence may take the direction of rest from, or partial cessation of, production; but the ultimate objects of human existence can only be gratified in a degree directly dependent on the greater or less potential surplus ratio. We shall therefore endeavour to ascertain what causes tend to increase and what causes to decrease the surplus ratio.

The human race, in common with all forms of animal life, naturally seeks to satisfy its wants with a minimum of personal exertion. Bees do not discard suitable honey stores adjacent to their hives, to seek similar distant stores; horses and other grazing animals appropriate such suitable objects of the same kind as are nearest to them, and similarly man, when seeking any natural object, appropriates such of the kind he requires as is most easily obtained.

Undiminishing objects are not affected by this fact, as an unlimited quantity of the particular object is of equal accessibility.

Unreplenishing objects will obviously be appropriated in the order of their relative accessibility. With animals below man the degree of accessibility is inversely proportionate to the amount of force required, inasmuch as only the muscular force of the species is available, and force therefore measures individual exertion. With man, however, one store of an unreplenishing object, requiring a large amount of force, may be more accessible than another calling for a much smaller amount. Of two coal properties, A and B, at A may be required more force to extract and convey

the coal than at B, but plentiful stores of cosmic force may be available at A and not at B; in that case the coal at A, though requiring more force, would be more accessible than the coal at B, and would be first produced. Appropriation in the order of relative accessibility must however be understood to be subject to reasoning foresight; when a coal-pit is sunk, for example, the coal will be worked so as to minimise the quantum of intelligence necessary for the extraction of the whole area of coal intended to be raised by means of the new pit, and much of the most accessible coal, near the bottom of the pit, will be worked last instead of first, as its extraction, before that in the rest of the area, would immensely increase the expenditure of force and intelligence necessary to obtain the more distant coal.

Replenishing objects will also be first appropriated at the most accessible site. So long as the quantities required do not exceed the quantities replaced at such site by the recuperative powers of nature, these objects, in relation to production, are practically undiminishing objects. When the most accessible site can no longer supply continuously what is required, recourse must be had to less favourable sites, and, as the recuperative powers of nature are overtaken at each site in succession, this class partakes of the character of unreplenishing objects, with the possibility, as with wild animals, of complete exhaustion of the supply.

Since intelligence and force are both necessary to all production, and, while force is practically inexhaustible, intelligence is a limited element, it follows that the greater or less quantity of products per unit of intelligence (i.e., per producer) must depend *inter alia* upon the greater or less amount of force which each unit of

intelligence can direct; in other words, the surplus ratio will tend to increase with any accretion to, and decrease with any diminution in, the quantity of force which each unit of intelligence can direct. In the last chapter we noted three methods by which intelligence in relation to force could be economised, viz.: (1) by training certain domesticated animals, (2) by the employment of automatic machinery, and (3) by the appropriation of individuals to special and repeated acts of production, but none of these methods can be effectively adopted while an individual is producing only for himself. They are practically only available when there is intensity of production, and the extent to which they can be adopted appears to continually increase with the raising of the degree of intensity. The first of the intelligence-saving methods above noted—the training of domesticated animals—does not enter largely into production, but this is most extensively adopted when the degree of intensity is high; the limited mentalities of such animals cannot be trained to undertake a large number of differing duties, but, with a high degree of intensity, each animal can be utilised continuously in one or two duties, within the scope of its mental powers. The other two methods of economising intelligence—the employment of automatic machinery, and division of labour—are increasingly operative as the degree of intensity of production rises. In relation to automatic machinery this is obvious to anyone who has the opportunity of comparing the manufacturing processes of the same industry, conducted respectively on a large and small scale. The small master, as he is called, does many things by hand which, in a large factory, are done by machinery, for, if he incurred the expense of the

automatic machine, he would not have sufficient work to keep it occupied. The machine itself represents a large amount of intelligence consumed in its construction ; if that original expenditure of intelligence be spread over a large production by the constant utilisation of the machine, there results a saving of the total intelligence consumed in the machine and its products ; but, if the machine be not kept continually producing, the intelligence represented in its construction has to be divided over a smaller quantity of products, and may make the total consumption more than if the machine be dispensed with. There appears to be no limit to the power of economising intelligence by the use of automatic machinery, as the degree of intensity of production rises. The two do not necessarily advance *pari passu*, but it may safely be affirmed that the evolution of no product has yet reached the degree of intensity, at which a further raising would not render economically possible the further substitution of machines for intelligence.

To a much greater extent a raising of the degree of intensity of production economises intelligence, by the appropriation of individuals to special and repeated acts of production. Every rise in the degree of intensity makes fresh divisions of labour possible ; these result in further economies of intelligence, as indicated in the last chapter. It may be pointed out that this is what tends to give stability to manufacturing trades already established in particular countries, towns, or districts ; if an attempt be made to start such a trade in a new district, the different branches of production cannot be sub-divided so completely as is possible where the trade is carried on more intensively, and thus, unless there are other advantages in the new district which compensate this disadvantage, such

attempt is likely to fail. In respect of division of labour, as in respect of automatic machinery, it may be safely affirmed that the evolution of no product has yet reached a degree of intensity, at which a further rise would not render possible further economies in intelligence.

As stated in Chapter IV, division of labour also effects a saving of human force, and in that respect also, although only to a small extent, the surplus ratio tends to increase with a rise in the degree of intensity of production.

Such being the theoretical relations of force and intelligence in operation, we will next consider them in combination with each of the classes of natural objects. Natural objects are brought into relationship with force and intelligence in two ways—(1) as the basis or adjunct of the ultimate products directly consumed by the human species, and (2) as a constituent of produced force; whichever of these purposes they may serve, the tendencies which we shall proceed to define are equally operative.

Undiminishing objects do not tend to fetter or counteract the theoretical relations of force and intelligence, and, with this class, the variation in the degree of intensity of production has free scope to increase or decrease the surplus ratio.

Unreplenishing objects, we have seen, are appropriated in the order of their relative accessibility, whence it follows that, at each site where any particular object of this class is produced, there will be (subject to what was stated on page 49 as to reasoning foresight) a tendency to a continued increase in the quantity of force required to obtain a given quantity of product; or, in other words, the quantity of product

per unit of force will tend to decrease. As each favourable site of production is in turn exhausted and abandoned, recourse must be had to less favourable sites, where, either the force required per unit of product is more, or where the facilities for using non-human force are less. In either case the quantity of product per unit of intelligence must from these causes tend to decrease. If the degree of intensity remain constant, there will be a continuously decreasing surplus ratio; if the degree of intensity rise, there will be a struggle between the tendency of the surplus ratio to increase, resulting from the relations of force and intelligence, and the tendency to decrease, resulting from the continuously decreasing accessibility of the natural object. The result of the struggle would be different probably with each particular natural object; with those un-replenishing objects which approximate to undiminishing objects (see page 21), the retarding tendency of decreasing accessibility might be almost nil; with other objects, such as the rarer metals, the increase in the scale of production might, notwithstanding increased intensity, speedily bring about a decrease in the surplus ratio. If the degree of intensity in this class of natural objects decrease, there must result a decrease in the surplus ratio of the products into which they enter, as the control of intelligence over force would decrease, concurrently with decreasing accessibility of the natural object.

So far therefore as this class of natural objects enters into production, it has a tendency, varying in strength with each particular natural object, to counteract the increase in the surplus ratio attributable to a rise in the degree of intensity of production :

theoretically each object would tend towards the highest surplus ratio at that degree of intensity, where the loss per unit of force due to decreasing accessibility first equals the gain per unit of force resulting from the saving of intelligence.

Replenishing objects, while the scale of production does not call for more than the unaided recuperative powers of nature supply at the most accessible sites, partake of the characteristics of undiminishing objects, and, within that limit, allow free scope to the increase or decrease of surplus ratio coincident with variations in the degree of intensity of production. With some nominally replenishing objects, such as tidal waters, the limit is never passed; with others, of which herrings and codfish are examples, the supplies, on the existing sites of production, appear to be practically undiminishing, in relation to any probable increase in the scale of production. With many replenishing objects, when the unaided recuperative powers of nature at the most accessible site fall short of what is required to maintain the scale of production, there obtains, at that particular site, a rapid decrease in the degree of accessibility: the quantum of reproductive power is invaded, and, if the scale of production be maintained or increased, the supplies due to the unaided recuperative powers of nature will continually diminish and ultimately be exhausted. Before that point is reached, recourse is usually had to less favourable sites, which are utilised when their degree of accessibility, originally less, has become equal to the continually decreasing accessibility at the more favourable sites. Some replenishing objects, however, among which we may note the dodo and the buffalo, have been exhausted; others, such as seals and elephants

previously referred to, have attained a scale of production which has overtaken the recuperative powers of nature, not only at the more favourable sites, but at every known site.

The most important of replenishing objects in Human Economics are those constituent parts of vegetable produce, which are found in land (see page 24). These are required in the evolution of crops of corn, roots, grasses, and green vegetables. As regards their replenishing power, it appears that it cannot altogether be exhausted, and in this important respect they differ from seals, elephants, and other forms of animal life. The experiments at Rothamstead demonstrate that, without manures, a similar crop may be grown continuously on the same plot: the produce per acre is very small compared with fertilised plots, but there appears to be an average quantity (varying with good and bad years), which the unaided recuperative powers of nature will provide, although no rest be given to the land, other than the inevitable rest between seasons.

The appropriation of the constituents of the soil in agriculture also illustrates the working out of a problem arising in connexion both with replenishing and unreplenishing objects, that of relative accessibility. These constituents are found intermixed with stones, and also appropriated naturally in the growth of weeds. With rough tillage, some portion of the constituents are utilised in the production of the required crops, but only a fraction of what might be similarly available, if all weeds were eradicated and all obstructive matter removed. When the products resulting from such rough tillage prove insufficient for the wants of the community, the problem arises,

whether the deficiency shall be made up by similar tillage of more distant lands, or by more thorough tillage of the lands already roughly cultivated. Let us suppose that the rough tillage represents x units of intelligence, expended, directly or indirectly, in evolving b products from F plot of land; it is required to increase this production to, let us say, $2b$. On the distant lands (G plot) x units of intelligence will provide the necessary additional b products *in situ*, but it will require y units of intelligence to transport the products to the place of consumption, i.e., at or near A. Now let us suppose z_1, z_2, z_3 , &c., to represent units of intelligence which can be expended in successive degrees of higher intensity of tillage of plot F, and that $x + z_2$ units of intelligence would evolve at F the entire $2b$ of products required. Under these circumstances will the additional b products be evolved at plot F or plot G? Or, in other words, are the required constituents of the soil, obstructed by stones and intermixed with weeds, at F more or less accessible than the free constituents of the soil at G? The answer depends on whether z_2 is greater or less than $x + y$; if less than $x + y$, the additional products will be evolved at F; if greater than $x + y$, while z_1 is less $x + y$, part of the additional products will be evolved at F and part at G, i.e., F will be cultivated to the degree of $x + z_1 + a$, where $z_1 + a$ is less than z_2 but equal to $x + y$, and the balance necessary to make up the additional b products required will be evolved at G. As the community further increases, plot G will be fully cultivated up to the x degree of intensity; then, if the requirement still increase, recourse will be had to the site (H), next in order of accessibility, requiring v units of intelligence to

transport the products to F. Let us suppose that $v = z_3$; then this will regulate the degree of intensity applied to plots F and G, thus:—

F will be cultivated to the $x + z_3$ degree of intensity.

G will be cultivated to the $x + (z_3 - y)$ degree of intensity.

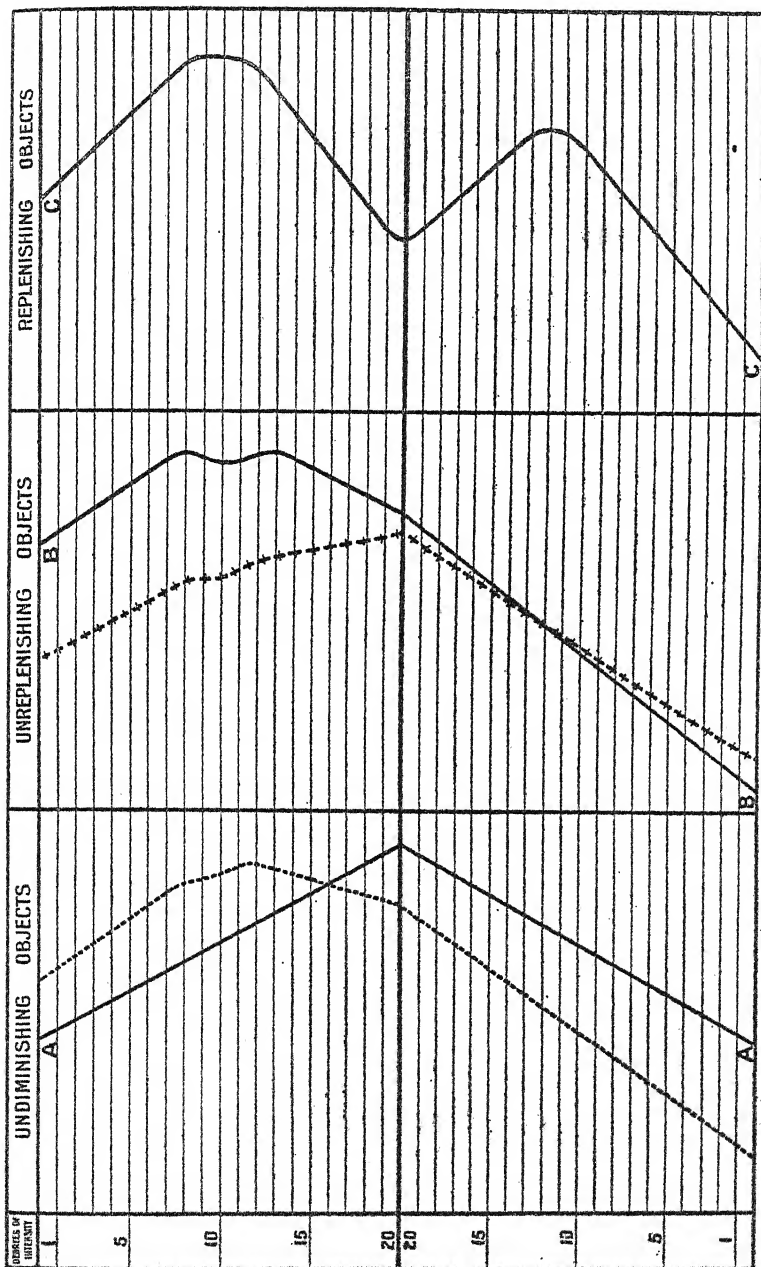
H will be cultivated to x degree of intensity.

When the problems of relative accessibility are worked out under actual mundane conditions, they present complications more intricate than those indicated in the foregoing hypothesis. Thus we have assumed that the products *in situ* of x units of intelligence would be the same at each of the plots F, G, and H; it is unlikely that such would be found in actual experience. G and H would probably differ considerably in potential fertility from F and from each other, not only in the quantity of products resulting from x units of intelligence, but also as regards the rate of increase resulting from the application of additional units, i.e., though x units might give the same quantity of products *in situ* at F and G respectively, the result of applying $x + z_1$ units might vary greatly at each plot. Another complication arises when, through the growth of other communities, identical plots of land are brought within the range of possible sources of supply to two or more communities. In such event, the conditions affecting accessibility in any one of such communities have to be taken into account in all the others with which it is thus brought into relation. The nature of some of these complications will be considered subsequently.

Several unreplenishing objects illustrate similar principles, governing their relative accessibility. Coal,

iron, and other minerals and metals are found closely associated with other objects, and require to be extracted therefrom. Theoretically complete dissociation is possible, and the whole quantity of the desired mineral or metal existing at any spot can be obtained, but in practice it is found that, past a certain point, the extraction proceeds with increasing difficulty, and the quantity obtained per unit of intelligence continually decreases. At some point it therefore becomes advisable to abandon the process of extraction, and to have recourse (as with the constituents of the soil) to the stores of such object next in order of accessibility. This is aptly illustrated in the South Staffordshire coal field. When the thick coal was first worked, there were such large quantities easily accessible within an area immediately adjacent to the various workings that the pits were abandoned when the most accessible portions of the coal had been extracted, leaving underground large masses of the mineral called ribs and pillars. Continuous working has nearly exhausted this fine seam, and the degree of accessibility at which it ceases to be remunerative is now determined by the quantum of intelligence necessary to extract distant coals and transport them to the district. Consequently, not only are all virgin portions of the seam now worked so as to completely extract them, but fresh pits are sunk in order to extract the ribs and pillars, which, in former days, had been abandoned as insufficiently accessible.

To make clearer the foregoing conclusions, as to the effect of variations in the degree of intensity of production upon the several classes of natural objects, we will show them diagrammatically, by what we will call Lines of Production.



The rectangular space, opposite each degree of intensity in the diagram, is intended to show, by the intersection of the downward lines, the relative production, per unit of intelligence, with the inventive faculty inoperative. The history commences at the top of the diagram, and the top portion indicates the effect, on typical natural objects of each class, of a continuous rise in the degrees of intensity of production from 1 to 20. At that point we suppose retrogression to set in, and the intensity falls back from 20 to 1.

Unity of intensity, in the diagram, may be taken to represent any assumed number of units of intelligence, applied to the evolution of products, from typical natural objects, in the state for the time being of human knowledge. With undiminishing objects, (line A A) the tendency of a rise in the degree of intensity is a continuous increase in the production per unit of intelligence, i.e., in the surplus ratio; the tendency would not be so regular as the diagram indicates, as the benefits of more complete division of labour would not accrue strictly *pari passu* with the rise in the degree of intensity. After the highest degree of intensity in our hypothetical history of this class of natural objects is passed, retrogression at the same pace as the former progression sets in, and the quantitative results simply retrace their former steps, as shown in the lower part of the diagram.

With a typical unreplenishing object (line B B) the tendency of a rise in the degree of intensity of production is represented by an irregular curve; the first tendency, as with undiminishing objects, is towards an increase in the surplus ratio or quantitative results per unit of intelligence, similarly due to the

benefits of division of labour, but, with a continuous increase in the scale of production, the point is reached at which these benefits begin to be neutralised by decreasing accessibility; then for a time the line may wave, in the contest between increasing division of labour and decreasing accessibility, and, ultimately, the latter overrides the former, and the quantitative results per unit of intelligence decrease. In the second part of the history, when the degree of intensity falls, the benefits of division of labour are gradually lost, and, concurrently, the accessibility continues to decrease, so that, when unity is again reached, the quantitative result per unit of intelligence is very much less than when the history began.

With a typical replenishing object (line C C), the tendency of a rise in the degree of intensity of production is also represented by irregular curves. At first the effect is the same as with undiminishing objects; the benefits of division of labour accrue, up to the point at which the demand overtakes the recuperative powers of nature at the most favourable site; then there is a set back, with continually diminishing results, as nature is successively overtaken at the second, third, fourth, and fifth points of relative accessibility. When the fall in the intensity sets in, the quantitative results per unit of intelligence begin to regain what was lost *pari passu* with the rate of such loss; but the recovery will be limited to the best results obtainable at the most favourable site where the reproductive powers of nature have not been absolutely destroyed, and, from that point, the continued fall in intensity of production will operate, as with undiminishing objects, to reduce the quantitative results per unit of intelligence; when unity is reached in the falling

intensity, such results will be smaller than those which obtained at the commencement of the history. The diagram has been constructed on the hypothesis that the reproductive powers of nature were, during the rise in the degree of intensity, absolutely destroyed at some of the most favourable sites existing at the commencement of the history.

It will be well to repeat here, what was stated in first defining these classes of natural objects, that they must be regarded simply as types, which modulate into each other. Timber, as before stated, is strictly a replenishing object, and the trees of quick growth have the characteristics thereof; but the time required to bring timber to maturity varies, from fourteen to fifteen years for larch poles, to the centuries required for the giant trees of California. While the former, when not planted but left to the haphazard of nature, may be regarded as typical replenishing objects, the latter, in relation to Human Economics, are practically unreplenishing objects; between these extremes are numerous varieties, each requiring a different period of growth. Let us suppose that the line of production CC in the diagram represents accurately the effect of variations in the degree of intensity upon larch poles, and the line of production BB the like effect upon Californian pines. Between these two extremes exist all the other varieties of timber, the effect upon which of variations in the degrees of intensity would not be represented correctly by either of the lines BB and CC, but by something between the two, and, if we traced the line of production of each variety, we should indicate those coming quickly to maturity by lines approximating to CC, and those requiring more extended periods by lines losing with such extension

more or less the irregularities of C C, and approximating to the steadier curve of B B. Further, coal and gold are both properly classed as unreplenishing objects, and coal, as we have seen, over lengthened periods manifests the characteristics of its class. But, in relation to any probable consumption, the amount of coal of equal accessibility is so large, that the effect of using up the most accessible portions is hardly noticeable from year to year. Thus the economy from increased divisions of labour is scarcely checked, and, with any rise in the degree of intensity, the line of production approximates to that of undiminishing objects. Gold, on the other hand, is an unreplenishing object, which, on the present scale of production (apart from the discovery of fresh deposits, and improvements in machinery, which are excluded from present consideration), would mark quickly a curved line of production, and, with any increase in such scale, the radius of such curve would rapidly shorten.

To represent diagrammatically the tendency of variations in the degree of intensity, a separate line would have to be drawn for each object, as probably no two natural objects would be identically affected.

Every replenishing and unreplenishing object, from the action of the opposing tendencies, at some degree of intensity of production gives the highest quantitative results per unit of intelligence. This degree in the production of an unreplenishing object would vary from time to time, as the more accessible stores became exhausted. With a replenishing object, it would be stable at the point where it corresponded to a scale of production which just balanced the reproductive powers of nature, at the site most favourable for the time being. Such degree of intensity in

relation to unreplenishing and replenishing objects we will call their *economical point*.

The number of products into which only one natural object enters is, under the conditions of civilised life, comparatively small and unimportant. We exclude from consideration the atmosphere which we breathe, as the starting-point of the problems of Human Economics is the existence of a being, endowed with human faculties, in the conditions which render the continuance of existence possible; without the atmosphere existence ceases practically immediately, and, while not attempting to draw a sharp logical line between this and other necessities of existence, we commence our investigations with a breathing individual, in the environment enabling him to breathe. Circumstances arise in which an individual would exert every faculty he possessed to acquire needed air, and such circumstances illustrate some of the problems of value which enter into Cosmopolitan Economy, but they are so exceptional that they need not now concern us.

Primitive man, like bees, doubtless evolved and consumed many products into which only one natural object entered, such as nuts and wild fruits, consumed *in situ*, or transported to the place of consumption by human force only. To a small extent such products are similarly evolved and consumed at the present day, and the result of variations in the scale of production would be indicated by a line of production approximating to CC in the diagram. Practically all products now consumed in civilised communities are compounded of two or more natural objects, which enter into them as the base of the ultimate product, or as part of the force or machinery, by means of which the products are evolved and transported to the place of consumption.

Such products, compounded of two or more natural objects, will obviously be affected, like their constituent parts, by variations in the intensity of production. The product will absorb into itself the tendencies of its several parts, in the proportions in which such several parts enter into it, and the line of production of such product will be the resultant of such tendencies, conflicting or co-acting in such proportions. Thus, let us suppose a product compounded of an undiminishing and an unreplenishing object, whose lines of production are represented respectively by the lines A A and B B of the diagram, and that in such product three-fourths of the former enter, and one-fourth of the latter. With a rise in the intensity of production the line would bend outwards, until the degree was reached where B B begins to curve; then, as the increase in the scale continued, a slight curve would be shown, gradually shortening its radius, but to a slight extent only compared with B B, owing to the predominating tendency of A A. If in the product the constituent proportions were reversed, viz., one-fourth A A and three-fourths B B, the effect of a rise in the intensity of production would be indicated by a sharper curve, approximating to the line B B. We have suggestively indicated these two conditions, by a line of crosses to indicate the product $\frac{3}{4}$ A A + $\frac{1}{4}$ B B, and a line of dashes similarly to indicate the product $\frac{1}{4}$ A A + $\frac{3}{4}$ B B. The effects of a fall in the intensity of production are shown in the lower part of the diagram.

We proceed to summarise the conclusions drawn in this chapter:—

Human powers of production are limited.

The ultimate aims of Human Economy can be attained only, when production is more than sufficient to maintain the community.

The extent to which such ultimate aims can be attained depends upon the greater or less surplus ratio of products.

• Natural objects utilised in production are appropriated in the order of their relative accessibility.

The raising of the degree of intensity of production tends to increase the surplus ratio, by effecting savings in the application of intelligence to production.

As regards undiminishing objects, such tendency would continue *ad infinitum*; as regards unreplenishing objects, it would be checked by decreasing accessibility; as regards replenishing objects, it would be checked when the recuperative powers of nature, at the most favourable site, were trenched upon.

In so far as replenishing and unreplenishing objects enter into production, there is a degree (called the Economical Point) of intensity, at which are obtained the highest quantitative results per unit of intelligence.

The effect of intensity of production upon products compounded of two or more natural objects will be the resultant of its tendencies as regards the several constituent parts.

CHAPTER VII

OBJECTIVE LIMITS OF PRODUCTION

AFTER our investigation of the natural laws controlling the evolution of products by the human species, we now approach the second subject of inquiry indicated at the commencement of the last chapter—To what particular products will those limited powers of production be applied? Psychological causes enter into this problem, but there are extrinsic factors which must first be considered. Before determining what particular products will be produced, we must first ascertain what can be produced.

Reviewing the three economic conditions noted in the last chapter (see page 44), alike possible for bees and human communities, the second condition was explained to be a state of productive equilibrium, in which the workers produced enough to maintain themselves and provide for their own depreciation; and, when in a human community production rises above that state, the surplus may be applied (1) wholly in improving the standard of existence, (2) wholly in increasing the numbers of the community, or (3) partially to each of those ends. The power to evolve products improving the standard of existence marks a dividing line between bees and humanity, and, at that point, it is necessary to draw a theoretical distinction in human products between what we will

call *Staples* and *Non-Staples*: *Staples* being the products necessary to the existence of the individuals of a human community, in the state for the time being of civilisation; and *Non-Staples* being all other products.

We have called the distinction theoretical because the state of civilisation is for ever changing, and with it change the products necessary to existence. In these islands, to go back no farther than the pre-Roman period, the physical qualities of the community have slowly changed with the constantly improving standard of existence, so that the greater number would now perish if the products on which their barbaric ancestors lived and multiplied were alone available. In a declining civilisation, on the other hand, the more hardy individuals survive, and the community in successive generations acquire physical qualities enabling them to thrive under deteriorated conditions of existence. In an improving community, some non-staples are thus continuously becoming staples, and, in a declining community, staples from time to time change to non-staples.

The history of mankind shows that staples are mainly vegetable products, or directly dependent thereon. Thus, in the hunter stage of civilisation, staples are either wild graminivora, or carnivora which in their turn subsist, either directly or with one or two removes, on graminivora; in the herdsman stage, staples are almost entirely graminivora; in the agricultural stage, selected vegetable products become the chief staples, graminivora occupy only the second place, while carnivora are but scantily produced. As civilisation advances, dependence upon the products of the soil thus becomes more direct and complete. Throughout the history of the race there have been

doubtless some communities whose geographical surroundings have made them mainly dependent upon fish, and who are thus exceptions to the general rule, but, compared with the whole race, these exceptions are few and unimportant.

The habits of a community change slowly as civilisation advances or declines, and, with such changes, also vary the quantity and kind of vegetable products *per caput*, entering into the staples required. In different co-existing communities also, the habits and states of civilisation vary greatly, inducing corresponding variations in the quantity and kind of vegetable products entering into staples. The quantity and kind of staples required *per caput* thus vary, in the same community at different periods, and in different communities at the same period.

Apart from the slow changes due to advancing or declining civilisation, the possible consumption of staples of each community varies from year to year, within slight deviations, *pari passu* with the number of individuals in the community. Food and clothing are the two principal staples. The human body is limited in its capacity for absorbing food, and cannot carry with comfort more than a certain amount of clothing. The consumption is, therefore, fairly proportionate to the number of consumers, the limits of deviation being the extra quantity of food consumable through gluttony, on the one hand, and, on the other hand, the margin in quantity of food and clothing between what a poor individual would consume, and what he can exist upon. But the gluttons who thus affect the consumption are few, and the number of poor who do not get sufficient food and clothing is a small proportion.

What economists consider waste is mainly in respect of quality, not quantity. Men and women of luxurious habits do not consume much, if any, more in quantity than the poorer classes, and the consumption of articles of fine quality, by a portion of the community, does not materially affect the proportion between population and the quantity of staples consumed. It involves only that a number of individuals, living on plain staples, shall manipulate a small quantity of similar staples, in ways to suit the luxurious taste of a few. The consumption of staples will be the same as if the luxurious few consumed plain staples, and fed and clothed gratuitously the manipulators. An example will illustrate this: Let us suppose a man of wealth, living on an island with an establishment of 600 cooks and 600 tailors, engaged entirely in preparing his food and clothing in luxurious fashions; that would be an example of excessive waste, but, to maintain such an establishment, he would have to purchase staples sufficient for 1,201 individuals—1,200 separate portions of which would be consumed by his servants while they were fashioning the remaining portion consumed by himself.

This is further illustrated by our fellow-creatures, the hive-bees, in working out the ends of bee existence. Small quantities of a food, more costly, so to speak, than the staple honey, are required for the nutrition of the princesses, and certain members of the community are told off to elaborate this product, which apiarians call royal jelly. The amount of honey consumed, however, is the same as if the princesses were fed on the staple honey; and with bees, as with mankind, the consumption of staples is proportioned to the numbers of the community, producers, queens,

grubs, drones, and ministers to luxury, all included.

Within the small limits of deviation mentioned above the consumption of staples will, therefore, rise and fall with the numbers of the community. The production of staples will similarly rise and fall as, subject to the accumulation of reserves against bad seasons, no purpose can be served by producing staples which cannot be consumed. If, for example, one-sixth of a community produce as much staples as the whole community can consume, the remaining five-sixths will not obviously devote their faculties to producing staples which are not wanted.

On this point also we get instruction from bees, whose instincts prevent them accumulating staples in excess of possible consumption. The one outlet for surplus production with bees is, as before stated, the increase of the species. While it is possible to gratify this propensity the bees are never idle, but continue to produce staples and to send off fresh colonies, as quickly as the surplus production will allow. But no colonising takes place in this country after the month of July, natural selection doubtless having demonstrated that later swarms ran great risks of perishing from starvation. After this only outlet for surplus products is closed, the bees regulate their further production of staples by their possible consumption. If, when the colonising time is past, a favourable period for the collection of honey follow, there ensues what apiarians call a honey glut; the bees fill their combs sufficient for the winter consumption, and then hang about the hive luxuriously idle.

The potential degree of intensity in the production of staples therefore depends upon the number of the

community, and rises or falls with any increase or diminution therein. The principal staples among civilised communities are mainly evolved from the several kinds of corn—wheat, rye, oats, maize, &c. We have seen in the last chapter that, in the state for the time being of human knowledge, all products into which only replenishing and unreplenishing natural objects enter, or in which they predominate, have economical points. Corn, in common with all vegetable products, consists partly of the constituents of the atmosphere, which are undiminishing objects, and the question arises whether the continuous gain in that class of natural objects, by successive rises in the intensity of production, might *ad infinitum* more than balance the losses accruing when the economical points are passed in the other two classes of natural objects entering therein. This point has, to some extent, been anticipated in our examination of the relative accessibility of unreplenishing objects (page 55), and it is only necessary to add that the hypotheses, which are there used as illustrations, are demonstrated as facts, by the experience of what are called new countries, i.e., countries which have suddenly advanced from the hunter to the agricultural stage of civilisation. It is there open to producers either to raise the intensity of production on cleared plots, or to continuously extend the cultivated area at lower degrees of intensity. If the former gave even the same proportion of surplus to gross products as the latter, it would be preferred, as the cost of clearing and of transport of the product would be saved. But the result of experience in such countries is that, with wheat for example, a degree of intensity equal on ordinary lands to a gross product of fifteen bushels per acre or less gives the highest surplus

ratio, whereas in this country, Holland, and Belgium the degree of intensity on soils of not higher natural fertility is equal to a gross product of about thirty bushels per acre.

It thus appears that, notwithstanding the extent to which undiminishing objects enter into the production of the staples of civilised communities, the line of production of such staples would show an economical point, and that the degree of intensity of production in some communities has been carried past that point.

The production of non-staples can commence only at the degree of intensity in the production of staples at which surplus products arise, for until intelligence, the limited element, is released from the production of staples, none of it can be available for the production of non-staples. From that degree, up to the economical point in the production of staples, there would be a continuously increasing quantum of intelligence potentially available for the production of non-staples, and, up to that point, one of the two alternative aims of surplus production, increase of the species, can be attained, with ultimate advancement of the other aim, the improvement of the conditions of existence. The intelligence applied to the increase of the species, by producing staples therefor, would be subtracted from that immediately available for the production of non-staples, but a community which applied its nascent surplus, as far as practicable, to the increase of the species, would sooner attain the economical point of staple production, and would then be in a position to improve the conditions of existence to a greater extent than another community, which, by applying its surplus products mainly to improvements in the

conditions of existence, had kept its numbers below the equivalent of the economical point of staples.

Supposing a community to have applied its surplus products concurrently to both aims, at the economical point in the production of staples the problems of production become complex. The lines of production of the various non-staples might not, in all probability would not, be at their respective economical points at the exact degree of intensity possible at the economical point of staples. The three possible conditions are that the economical point of non-staples might then (1) have been just reached, (2) have been passed, or (3) not have been attained. Condition (1) presents no difficulty, condition (2) is only theoretical, for non-staples are as numerous and varied as human desires, and, at the economical point of one class of non-staples, the further intelligence available could be diverted to another, or the labourers could enjoy rest, in itself an improvement of the conditions of existence. Under condition (3) it might be to the advantage of the community to increase the species beyond the equivalent of the economical point of staples, as the economical point of staples and non-staples combined might be at a degree of intensity beyond that of staples. This will appear more clearly if illustrated by figures. Let us suppose a community of 100,000 to represent a density of population equivalent to the economical point of staples; and, of such community, let us further suppose at that point one-fourth, or 25,000, can produce staples for the whole community, and three-fourths, or 75,000, are engaged in the production of non-staples. The numbers of the community, we will next suppose, are increased by 10,000, but, under the harder conditions of production

one-half of such increase is required to produce the additional staples required, leaving only one-half of the increase, instead of three-fourths, to join the producers of non-staples. The community will now consist of 110,000, of whom 30,000 will be producers of staples, and 80,000 producers of non-staples. The increased intensity in the production of non-staples, corresponding to the 5,000 additional workers, may have carried such production nearer the economical point, so that the produce of the 80,000, divided among the 110,000, may give a larger dividend of non-staples than the produce of the 75,000, divided among the 100,000.

A short examination is necessary of the meaning attached to the word 'community,' in relation to Human Economics. In Apiarian Economics a community means a hive, i.e., a collection of individuals working for certain common objects, and with no economic relations with individuals of the species outside itself. Several hives may be situated side by side, and one element of production, natural objects, may be common to all; but, immediately that element is appropriated and combined with force and intelligence, the resulting product is dedicated to the objects of the community to which the force and intelligence belong. There may be sections within the community, splitting it up into smaller aggregates of individuals, in some sense, mayhap, mutually antagonistic. Of this with bees we can know nothing, but, whatever may be the individual rights, we see the whole products of the hive applied to the sustenance of that hive and to the increase by that hive of the species, without aiding or being aided by the individuals of any other community.

This complete economical separation of communities does not exist in Human Economics. If we imagine the denizen of another sphere, unable to communicate with us, but examining us as we examine hives of bees, he would see large aggregates of individuals engaged in America, India, and Australia, producing food staples for consumption in England, and he would see similar aggregates in England engaged in the production of tools and clothing, for consumption in America, India, and Australia. This would lead him to the conclusion that the whole earth was one community, engaged in altruistic co-operation for common objects. Such is the ideal of cosmopolitan economists, but we denizens of the earth know that sections of the human race seek to cut themselves off from productive co-operation with other sections, except in so far as it will tend to their own selfish advantage. Notwithstanding the artificial barriers which are created with this object, co-operative productive relations to some extent obtain between all parts of the civilised world, and a community, self-contained and separated like a hive, does not exist. Nations and districts, however, approximate to the condition of communities, and the results indicated above, in the theoretical community of 100,000 persons, may be predicated as tendencies for the existing imperfect communities with partial mutual relations.

To give a concrete form to the idea of an economical point of staples and non-staples combined, let us imagine a self-contained community, in the present state of civilisation, residing in the island of Great Britain. The island, we will further suppose, has the natural resources necessary for the production of all

staples, and of the non-staples appurtenant to the existing degree of civilisation. With its varied geological structure, in some districts the production of staples requires a less expenditure of intelligence than in others, and some districts are similarly more favourably situated for the production of implements to aid in the production of staples, and for the production of non-staples. In an island so large as Great Britain it is evident that to transport staples and heavy implements and non-staples from place to place consumes an appreciable quantity of intelligence, i.e., appreciable in relation to the consumption of intelligence in the actual production of the staples, implements, and non-staples at the site of production. Let us suppose that there are three potential manufacturing centres for the production of implements and non-staples, situated respectively at Birmingham, Leeds, and Glasgow, and that all the rest of the island is agricultural, i.e., engaged directly in producing staples and the raw materials for non-staples. Let us further suppose that the production of implements and non-staples first settled in Birmingham, which at the time of our hypothesis has become a large city. Starting from Birmingham, the demand for staples for its manufacturing population would, for the reasons laid down in Chapter VI (see page 56), cause the cultivation of the soil in areas of diminishing intensity, bounded by the circumference of a series of concentric circles, of which Birmingham would be the centre. Subject to variations in the fertility of the soil, the degree of intensity applied twenty miles north of Birmingham would be the same as the degree twenty miles distant from Birmingham in any other direction. Southward from Birmingham, where the district would not come within the influence

of any other manufacturing centre, the intensity would, subject to relative fertility, continuously diminish as the distance from that city increased. In the surrounding districts immediately contiguous to Birmingham we should find intense production, using up comparatively a large number, a , of units of intelligence per acre in production, giving a large gross product, b , in staples per acre, also a large net product, c , per acre, after deducting the consumption of the units of intelligence employed in production; but the net product, $\frac{c}{a}$, per unit of intelligence would be smaller than when the intensity of production was less. As the distance from Birmingham increased, the units of intelligence per acre and the gross product at the sites of production would, subject to relative fertility, both be smaller, say, $(a - z)$ and $(b - y)$ respectively, producing a net product per acre, d , which might be smaller than, equal to, or larger than c , but $\frac{d}{a - z}$ would be greater than $\frac{c}{a}$ to provide for the transport to Birmingham, which transport, we will suppose, would use up e units of intelligence consuming f staples. Then the proximate and distant zones would be cultivated to such degrees of intensity respectively that $\frac{c}{a}$ should equal $\frac{d - f}{(a - z) + e}$, which would be the economical point of the two zones combined.

The hypothetical concentric areas surrounding Birmingham we will number according to their relative distances from the common centre. Zone No. 1 would be a band of cultivation immediately surrounding the inhabited and manufacturing centre; the breadth of the band would be such that the

consumption of intelligence, in transporting across it implements and staples, was a negligible quantity. Around this, we must suppose, concentric bands, numbered 2, 3, 4, 5, &c. Zone 2 would commence where the consumption of intelligence in transport first became a noticeable factor, and Zone 3 would begin where the increase of such consumption, over the like consumption where Zone 2 commenced, similarly became a noticeable factor. Having regard to the effect of intensity, production would at first be confined to Zone 1, and the line of production (see diagram) would extend outwards, as the degree of intensity rose, up to a certain point, and then would commence to bend. Apparently the economic point would then be reached, but not so necessarily. In the existing condition of civilisation, the cultivation of Zone 1 alone might involve the production of implements in aid of cultivation to a degree of intensity far below the economical point of such implements. The cultivation of Zone 2 might raise the degree of intensity in the production of such implements, so as to effect a material saving in the intelligence entering into the final product. This saving would react upon production in Zone 1: the two zones would, notwithstanding, be cultivated to the respective degrees of intensity that $\frac{c}{a} = \frac{d-f}{(a-z)+e}$, but $\frac{c}{a}$ at the economical point, under these conditions, would be larger than $\frac{c}{a}$ at the economical point of Zone 1 cultivated alone. In other words, the economical point of Zone 1 and 2 combined, after allowing for the burden of transport on Zone 2, might give net products per unit of intelligence equal to or greater than those obtained at the economical point of Zone 1 cultivated alone. Similarly, Zones 3, 4, 5,

&c., might also be brought into cultivation, with consequential savings in intelligence in the production of implements, and also in the transport of the products of Zones 2, 3, 4, 5, &c.

The point would be reached at last, at which any further rise in the degree of intensity in the production of implements would not, in Zone 1, give increased net products of staples per unit of intelligence, i.e., that $\frac{c}{a}$ would become smaller with higher intensity; nevertheless, the economical point of production for the community might not yet be reached. First, as regards staples, the net products of Zone 1 at this point might have become insignificant, in regard to the production of staples for the whole community, and the gain, by further increased intensity at the remoter zones, might more than counterbalance the reduction in the net product per unit of intelligence at Zone 1. The economical point in the production of staples would not be reached until the losses, by increased intensity in the proximate zones, outweighed the gains from the same cause in the remote zones.

But the economical point as regards staples might not be the economical point for staples and non-staples combined. As pointed out above, the saving from increased intensity in the production of non-staples might more than compensate for the reduced net product per unit of intelligence in staples alone.

Pursuing the development of our hypothetical community, let us suppose that, after the area of cultivation dependent on Birmingham had extended over the whole of England, discovery was made that the site of Leeds offered exceptional advantages for the

production of implements and non-staples. Their manufacture would then commence, tentatively at first, because of the great advantages possessed by Birmingham through intensity of production. The heavier implements would probably be first produced, the transport of which would be an important factor, and the Leeds implements would doubtless first be supplied to the district immediately to the north of Leeds, where the advantage in respect of transport, compared with Birmingham, would be most marked. This would react on the agricultural zone immediately adjacent to Leeds, and would approximate the degree of intensity in the production of staples in that zone, to that obtaining in the zones nearer to Birmingham. The area thus brought under the influence of Leeds would be withdrawn from the influence of Birmingham, and gradually, with increased intensity in the production of implements and non-staples, the whole of the country north of Leeds would be similarly withdrawn; the influence of Leeds would also presumably extend into Scotland. Some zones southward of Leeds, brought under its influence, would touch those remaining under the influence of Birmingham, and these would be perpetually tending towards one or the other centre, as its advantages in production relatively advanced or receded. The effect of the growth of Leeds on the production at Birmingham would depend upon whether, in the whole district previously under Birmingham influence, the economical point in the production of staples and non-staples had been reached. If such point had not been reached, increased intensity of production would be applied to all the zones and parts of zones remaining outside the influence of the new centre. If such point had

been reached, a new economical point, in the absence of fresh disturbing causes, would be worked out probably at some lower degree of intensity in the production of staples, but the lowering tendency would be checked by the disadvantage of diminished intensity in the production of implements and non-staples.

After Birmingham and Leeds had been thus developed, we may suppose the history of Leeds to be repeated at Glasgow. It is not necessary to trace again the effect of the rise of a new centre; it is evident that it would affect the economical point both at Leeds and at Birmingham, the latter through the districts on the borderland between the influence of both those centres.

The foregoing illustrates the principal factors in operation in raising production, in a self-contained community, to the economical point. In any community of the supposed extent, the actual working out would be much more complex than the illustration. Certain districts would be found to be specially suited for the production of particular staples or non-staples, which would cause the growth of numerous centres of population in lieu of the three only which we have supposed. This would affect the production of other staples in the contiguous districts from which each centre drew its supply, and that would react upon the districts supplying other centres. Under the law of diminishing returns, however, it is evident that, in the absence of any fresh disturbing cause, at some degree of intensity of production, i.e., of density of population, the economical point of staples and non-staples would be reached.

But, in Human Economics, the theoretical economical point of the supposed community would not be stable. There is one cause—the inventive faculty—the effect of which cannot be forecast, and which is continuously tending to push such point to a higher degree of intensity. Its aids to production consist, as has been stated in a previous chapter, mainly in economising the consumption of intelligence in production, whereby the same quantity of intelligence can apply larger quantities of force. In a particular condition of civilisation, let us suppose that two units ($2a$) of intelligence could apply b units of force, with resulting net products amounting to c , and that higher intensity in that condition would cause net products to increase in the following scale:—

$2a$ applying b would give c net products.

$4a$ „ $3b$ „ $c + d$ „

$6a$ „ $6b$ „ $c + \frac{3}{2}d$ „

Let us assume d to be less than c , and that the degree of intensity indicated by the first line is the economical point. Now, by the operation of the inventive faculty, let us suppose that two units of intelligence ($2a$) can control $6b$ of force. Two such units would then be able to work up to the same degree of intensity as six units under the pre-existing conditions, but the net product of such two units, under the new conditions, would be greater than $c + \frac{3}{2}d$, the net product of six units under the former conditions, by the amount consumed by four units of intelligence during the process of production. In this way new factors would enter into the problem, which would push the economical

point to a higher degree of intensity than that under the pre-existing conditions.

Another cause tending to the instability of the economical point is the incomplete separation of communities, which has already been noted. Implements and non-staples are produced in this country at a higher degree of intensity than is called for by the population of the country, in order to exchange for the staples and non-staples of other communities. This reacts on the production of staples in this country, and affects the economical point in a manner similar to the growth of a new centre of population within the community.

The conditions of existence cannot be improved beyond the state corresponding to the economical point, for the time being, of staples and non-staples. Up to that point, the continuous increase of population could be accompanied by a possible continuous improvement in the conditions of existence, and any falling back from, or passing beyond, such point would result in a diminution of the possible quantity *per caput* of the products constituting non-staples, i.e., in the deterioration of the material conditions of existence. This highest possible production of non-staples is, however, never attained, because material products are not the only means by which humanity deem they can improve the conditions of existence. As will be shown in the next chapter, many prefer indolence to material products. Sometimes this desire for indolence becomes characteristic of a community, who, when the means of existence are provided, seek only indolent ease and the propagation of their species. In other communities a desire for immaterial pleasures grows up with improved conditions of existence. The Arts and Literature

are cultivated in lieu of the non-staples, which, in a purely industrial community, might be produced. We are not arguing, of course, in favour of a purely industrial community, which would probably lead to as dull, blank, miserable state of existence as it is possible to conceive.

CHAPTER VIII

SUBJECTIVE CAUSES AFFECTING PRODUCTION

WE now enter upon the question : To what particular products will the limited productive powers of humanity be applied ? In the last chapter only the preliminary inquiry has been pursued : To what *can* such powers be applied ? The objective laws controlling the possible relative production of staples and non-staples, and the relation thereto of the economical point and the density of population, have been reviewed. We have now to consider the subjective inquiry : With such possibilities, what will the human race do ? As free agents it is obvious that the individuals may either produce or not produce, may procreate the species or may let it die out, may stop short of, attain, or go beyond the economical point.

In this investigation, as before stated, we get little light from Apiarian Economics. We see that the whole energy of bees is directed, first, to existence, and, secondly, to the increase of the species ; but what motive impels the workers, who apparently are also the rulers of the hive, to the second of these ends, we cannot guess. It is something differing essentially from human motives, as, in co-operating for such increase, the working rulers fill the parts only of providers and nurses.

In determining human motives, we have to base our

inquiry on the postulate that other members of our species are constituted with passions, appetites, and desires like to, though not identical with, those of ourselves; but we have strong collateral evidence of the truth of this, in the common basis of the laws of civilised communities framed to control the gratification of such passions, appetites, and desires, and in the consensus of approval of the works of eminent psychologists, poets, novelists, and others, who have analysed and portrayed human motives.

For brevity's sake, we will collect all these human passions, &c., under the head of—

IMPULSES, which we will define as all passions, appetites, and desires, the satisfying whereof affords pleasure to the individual.

The pleasure may be either physical, moral, or intellectual.

Disregarding as a negligible quantity certain religious fanatics, we note that the gratification of impulses involves the consumption of products, or of the elements of production, for, unless an individual is consuming, he must simply die. By introspection and by history we find that some impulses dominate, so that, when it becomes necessary for a number of individuals to choose between the alternative gratification of different impulses, we can foretell, with unimportant exceptions, on which the choice will fall. It follows that the products required for the gratification of these dominating impulses will have the first call upon the productive powers of a community.

There are two of such dominating impulses, which, while of unequal strength, are each more powerful than all others. These we will distinguish as primary impulses. They are—(1) the impulse for a prolonged

life, and (2) the sexual impulse. Modern naturalists have shown us the reason for the strength of these impulses. The first unquestionably is supreme; the wretched conditions under which individuals will cling to life indicate that this impulse is based rather on an inherited instinct, than on reason. Among the helots of slave-making nations, we find individuals will continue to exist in a state of hopeless misery. In the great cities of civilised countries, life is endured under circumstances of almost equal misery and degradation. Shipwrecks and mining accidents, involving the fearful pangs of thirst and slow starvation, also show how tenaciously our species clings to life; even murder and cannibalism are resorted to, in the ultimate struggle for existence. There are some individuals who prefer death to life under hard conditions, but such are exceptions.

The second dominating impulse, the sexual, is also one which, from the teachings of modern naturalists, we should expect to find strongly impressed by inheritance in all progressive nations. In the use of the term we include the desire for offspring, and in estimating the force of this impulse also we have not to deal with exceptions. Its active operation in perhaps every nation, except France, is daily proved, when we see that children are procreated, though the birth of every additional child proportionately deteriorates the conditions of existence of the parents.

Looking at communities as a whole, we find that the primary impulses exert their power very much in the same direction as the objective laws of production, and, up to the economical point in the production of staples, co-operate in increasing the density of population. A point at which such impulses

and laws are opposed is in the prolongation of life after individuals have ceased, from age or disease, to be producers. In a purely economical community such individuals would be put out of existence, like the drones who are destroyed by the worker-bees, as soon as they have completed their part towards the accomplishment of the aims of the community.

In Human Economics, when surplus products are potentially available, a number of secondary impulses spring up, all bearing on the improvement of the conditions of existence. Tastes are as various as individuals, and these secondary impulses are in their nature equally diverse; but, for the most part, they centre around a desire for luxurious ease. To gratify the primary impulses mankind endure uncongenial labour; thereafter they will be impelled towards ease and luxury, not necessarily towards indolence solely, or towards indulgence solely, but, according to individual tastes, perhaps to an equal enjoyment of ease and luxury, perhaps to the sacrifice of ease to luxury, or of luxury to ease, perhaps to the pursuit of favourite but unremunerative occupations. There are, indeed, some cases in which the labour, at first uncongenial, undertaken to gratify the primary impulses, has become a confirmed habit, and men have got to love the work for itself. But such cases are so exceptional as not to interfere with the general direction of the secondary impulses.

The varying character of these secondary impulses among different nations is an important factor in the problems of what we have called Communital Economy. As far as the primary impulses affect production and consumption, the whole species are alike, but past that point, in addition to numberless differences between

individuals, we also find inherited differences affecting whole races, and constituting national characteristics. These inherited secondary impulses seem to make up a great part of what is called civilisation, and a high state of civilisation appears to require the attainment of a high state of luxury before ease is sought. National characteristics must have become fixed at periods when communities were nearly self-dependent, and communication with other communities was difficult. At those periods, before civilisation had taught its numerous wants, the primary impulses, in countries where the staples of existence were in great profusion, could be gratified with little labour, and indolence would be generally indulged after the production of sufficient staples. Habits of indolence thus acquired would probably become an inherited national characteristic. A converse process would go on where staples, in the infancy of the inventive faculty, called for continuous labour. The gratification of the primary impulses in such communities would engender habits of continuous industry, which would become also an inherited national characteristic. When the inventive faculty reduced the quantity of intelligence necessary for the production of staples, it would not destroy the habits of industry, and in these nations the impulse to luxury would prevail over the impulse to ease. In other districts, as among the Esquimaux and Laplanders, the conditions of existence were so hard, that the primary impulses could never be fully gratified, and the sexual must often have been restrained by the stronger impulse for a prolonged life. Under these circumstances no secondary impulses appear to have arisen. The hard and hopeless conditions of existence appear to

have engendered contentment with a hard-working merely animal existence, out of which there is no desire to advance. The characteristics of communities, varying around these three types, enter into the problems of Communital Economy, and are beyond the scope of the present book. A great fact in the recent history of human economics is the breaking down of communities in relation to production. Men who have inherited certain habits enter upon lands, in competition with those with divergent characteristics. Production in fruitful countries is undertaken by races who have not inherited the indolence, engendered in the past by a too prolific nature. Races who have inherited habits of ease or luxury are brought into competition with races contented with harder conditions of life. These phenomena are seen in the irruption of European and Chinese races into America and Australia.

The gratification of the secondary impulses, and of the primary impulse for life prolonged beyond the potential productive period, involves the consumption of products by those who have supplied no part of the intelligence necessary to their production, for, where the laws of the community allow the existence of non-workers, the workers have to produce for such non-workers, as well as for themselves. A prolonged life is accorded, in most civilised communities, by poor laws or by charity, but the secondary impulses can only be gratified by individuals obtaining advantages over their fellows. The whole community cannot exist in luxurious ease, and some must, in opposition to their secondary impulses, produce for themselves and for those who rest. There is one possible method by which this could be avoided, i.e., that each individual

should accumulate, by expenditure of his intelligence, stores of staples and non-staples, as large as he would be likely to require in his life, and, after he had ceased producing, draw on such stores as he required; but this would be so cumbrous and wasteful, that the community would lose many of the advantages of intensity of production indicated in the foregoing pages, and in no respect would benefit. The earth brings forth its fruits in due season, and, subject to a reserve only for bad seasons, the amount of intelligence necessary can be applied as each season recurs; if, subject to such reserve, more than is required be produced in any one year, intelligence is thereby needlessly abstracted from other potential products for which it is available.

Civilised communities have found it advantageous to encourage industry by institutions giving individuals, who consume less than they produce, a right over future products. This is done by the laws of property and exchange, and by the different forms in which capital is allowed to accumulate. We are not concerned with the machinery but only with the fact that, under such institutions, the incentive to saving is the advantage thereby gained over the workers, so that the workers have to work for the savers, who are thereby enabled to gratify their secondary impulses.

The like institutions and the like motives stimulate the inventive faculty into operation. The laws of most civilised states, recognising the benefit to the community of new discoveries in processes of production, and also recognising the desire in individuals to gratify their secondary impulses, seek to stimulate inventors by giving them, for considerable periods, a benefit from their inventions. The benefit, which would accrue to a man in common with his fellows from

any new invention, is not sufficient inducement to devote the toil and thought necessary to new combinations and discoveries. The activity of the inventive faculty is found, *ceteris paribus*, to be greater or less, according as the material benefits likely to accrue to the inventor are large or small. There is no mark by which the potential inventor can be recognised, and the experience of nations has left him to be educed by the offered reward of an advantage over the working members of the community.

The causes which lead to improvements in the conditions of existence, being thus stimulated by a law-given power to individuals to obtain advantages over the workers of the community, we have next to consider within what limits such advantages can be enforced. The extreme limit would be reached, if the workers were allotted staples sufficient only to gratify the impulse for life during its potential productive period and the sexual impulse so far as was necessary to maintain sufficient workers to produce staples and luxuries for the privileged section, and in a slave-holding community the state of the workers would approximate thereto. At this point a human community diverges from a hive of bees. In the latter, if we regard the queen, princesses, and drones as the privileged section, we find that they possess among themselves powers of procreation to increase the number of workers practically without limit. In a modern human community several causes co-act to make necessary the procreation of workers by the workers themselves. First, the luxuries of modern civilisation tend, as is well known, to weaken the generative powers in both males and females, and moreover with the latter means are employed to prevent

the gratification of the sexual instinct resulting in the birth of children. Secondly, an inherited love of offspring would prevent parents of the privileged classes procreating children who would become slaves to the community. Thirdly, having regard to the proportion of workers to non-workers, and the period of gestation of a child, it would be a physical impossibility for the numbers of the workers to be kept up by the procreative powers of the non-workers. For these reasons the supply of intelligence in slave-owning communities has to be maintained, by permitting the gratification of the sexual impulse by the slaves themselves.

Slavery is, however, now abolished in all civilised communities, and we have to deal with workers who are free to work or not work as they please, and who work upon such terms as they can, as free contractors, exact. With them the secondary impulses come into operation after the primary impulses are gratified, and they are not content for the improvements in the conditions of existence to be limited to the privileged classes. The investigation of the methods by which, under civilised institutions, the workers appropriate a share of such improvements to themselves, falls within the purview of Cosmopolitan Economy, and is beyond the scope of this book, but, from a comparison of different historic periods, it is obvious that, when not restrained by law, the conditions of existence of the workers improve with an increase in the surplus ratio. In other words, the tendency is for the surplus ratio to oscillate near a stable point, in consequence of the workers, as the gross products per unit of intelligence increase, either reducing their hours of labour, or requiring a continuously increasing amount

of products for their existence and depreciation: if a community be travelling beyond the economical point, and the gross products per unit of intelligence decrease, the oscillation would be in a contrary direction, with the like tendency to return to the same stable point of surplus ratio.

The subjective causes influencing production are further objectively affected by the respective shares of individuals in the potential non-staples. If fairly evenly divided among the community, such non-staples would probably take the form of simple luxuries. If the control of the greater part of such products be in the hands of a few, they would take the form of highly costly luxuries for the use of the few. It is under the latter conditions that the highest works of Art have been produced, although there is no insuperable reason why Art should not be equally encouraged in a communistic condition.

At this point the problems of Natural Economy merge into the province of what we have called Communital Economy, as the direction in which will be applied the potential increase of products per unit of intelligence depends in a great measure on national characteristics. An Irishman will increase his species under conditions in which an Englishman or American will only prolong existence; a Chinaman or a Negro will propagate under more wretched conditions than an Irishman. The inhabitants of the temperate zones appear to direct the potential surplus production mainly towards material luxury, the inhabitants of the torrid zones mainly towards ease.

The direction in which such potential surplus production will be applied is also greatly affected by the widely diverse institutions of different communities,

which are also beyond the purview of this book. The investigation of the subjective and objective causes in this and the preceding chapter will not enable us to go farther than the following general conclusions: That the potential productive powers of each community will be applied:—

First;—To the production of staples proportionate to the number of the community.

Secondly;—To the production of non-staples, in the nature of semi-luxuries, which, according to the habits of each community, the producers require to propagate;

and thereafter, according to the habits and tastes of each community and to its institutions, production will cease, or will be directed to gratify the diverse luxurious impulses.

BOOK II

COSMOPOLITAN ECONOMY

CHAPTER I

INTRODUCTORY

COSMOPOLITAN ECONOMY, the second part of Human or Political Economy in the divisions marked in the first chapter of the preceding book, treats of the interrelations of production and consumption under the human institutions of private property and exchange. Amid numerous variations in the methods of their application, these two institutions dominate the laws of all civilised communities, and appear to be the natural outcome of the objective laws controlling production. The causes tending to the highest surplus ratio in production are, as shown in the preceding book, activity of the inventive faculty and intensity of production, whereby savings are effected in the application to production of intelligence, the only limited element. In the absence of the institutions of private property and exchange, it is difficult to see how the inventive faculty could be stimulated into activity, or how intensity of production could obtain, for it is necessary for individual inventors and intense producers to have a law-protected right over what they acquire or produce, and the means of exchanging their acquisitions or productions for the

productions of others ; otherwise each individual would evolve products only for the direct satisfaction of his impulses ; there would be small incentive to invention, and the producers would exist under hard conditions of barbarism. The community which first attempted production under laws approximating to the two institutions named, of which one, exchange, is the natural complement of the other, would secure great economic advantages over other communities, and, in the practically universal adoption of laws securing private property and protecting exchange, we doubtless see the survival of the fittest of the economic institutions which have hitherto been tried in the world.

Private property and free exchange were probably not completely adopted by any community at one step, but have been slowly educed from a communistic state as the growth of population necessitated, first, tribal and afterwards family divisions and rights. In this country absolute private property in most forms of chattels exists, but not in land, although the highest form of estate in land—a freehold in fee-simple—differs little from absolute ownership. Our laws of to-day retain in their forms many monuments of the struggles, by means of which private property in land has been gradually developed and freed from conditions and restrictions which, in many other civilised countries, still clog it. Similarly, the battle of free exchange has extended over ages, and continues to this day. The exchange of land and labour particularly has been, and still is, hampered in this country by law and custom ; in the other old countries of the world, for the most part, greater restrictions exist, while in our colonies and the United States, as regards internal exchanges, greater freedom obtains.

Most of the conclusions we shall draw in this book will not be completely applicable to any known community; they will be based upon an ideal state, in which absolute ownership alike in land and chattels and full freedom of exchange are presupposed. No community attains to that ideal state, but each falls short in a different degree, and is thereby diversely affected. The theoretical working of production and consumption under these institutions is the subject of this book; we shall have occasion to discuss the manner in which these theoretical results may be affected, aided or counteracted by special circumstances, laws, and customs, but the effect thereof on each community falls under another division of Human Economics, which, in the divisions marked in the preceding book, is distinguished as Communital Economy.

The institution of private property, for the purpose of this book, must be considered as securing to a freeman the absolute ownership or full legal estate in his own mental and bodily faculties, in all natural objects appropriated by him which others have not previously appropriated, and in all natural objects and products which he has legally acquired; such ownership carries with it the full power of disposal, either by gift, by exchange, or by the bequeathment of such things as are capable thereof.

Exchange, which is the complement of private property, is the means by which, under the protection of human laws, the legal estate in private property is transferred from one individual to another; it is reciprocal in its operation, that is, the legal estate in one kind of property is given for the legal estate in another. It is of two kinds: (1) A complete transfer, whereby the legal estate in what is transferred is

permanently divested from the owner; and (2) a limited transfer, called in relation to different kinds of property, hiring, letting, lending, &c., whereby a limited estate in the property exchanged passes from the owner only for a time, and is afterwards resumed by him.

Many of the divergences in the views of writers on Human Economics are traceable to imperfect definition in this branch of the science. Before therefore working out our conclusions, we shall explain fully the meaning we shall attach to one or two terms which we shall now have frequent occasion to employ.

VALUE is a word over which economists have argued without ceasing, and, even now, there is no universally accepted definition of the term. Adam Smith argued about it without defining it; he was content with pointing out the ambiguous use of the word to mean both value in use and value in exchange. The latter meaning has generally been adopted by economists, who have employed the word 'utility' to express what is meant by value in use. We shall be less anxious to work out a compressed scientific definition of the term than to give the reader a clear notion of the meaning attached to it in the following pages.

There is a close analogy between the phenomena of value and those of gravity or weight, which will aid us in making clear some obscure points. We speak of the weight of terrestrial objects, and compare the weight of one body with another. The weight of a body, however, is only the measure of the force with which the earth attracts or retains it. It is not the force itself, nor is it the density inherent in the body which induces the force to operate. Nevertheless, we speak of bodies possessing weight, and compare their

relative weights. This is a confusion of terms, akin to the application of the words 'smell' or 'taste' to mean both the inherent properties causing the sensation and the sensation itself. Now, as weight in terrestrial bodies exists only in relation to the earth, so value exists only in relation to exchange. As the weight of a body measures the force to be overcome to lift it from the earth, so the value of anything, in ordinary parlance, measures the moral force to be overcome to induce the owner to part with it. There is thus the same ambiguity in the use of the word 'value' as of the word 'weight.' The value of anything is used to express both those intrinsic properties which lead the owner to desire to retain it, and also those extrinsic forces which measure what will overcome that desire. It is necessary to get rid of this ambiguity, and, with that end, we shall restrict the use of the word 'value' to the first of those meanings, and for the second we shall employ a term which has become current in that connexion in the commercial world, 'valuation.' In our investigations these two words will have the following meanings:—

VALUE: those inherent properties or qualities of anything, which lead the owner to desire to retain it and non-owners to desire to acquire it.

VALUATION of anything is the measure of the owner's desire to retain it, or of a non-owner's desire to acquire it.

As stated above, under human laws two kinds of transfer are the subjects of exchange—a complete permanent transfer and a limited temporary transfer. It is obvious that, under ordinary conditions, a less inducement will suffice to bring about the latter kind of transfer than the former. The analogy of weight also applies in this connexion. To prevent a body for

ever from gravitating, a permanent force equal to its total weight must be employed; to counteract the gravitating influence for a time, a terminating force would suffice. To restrain a ton of iron for ever from gravitating to the earth, a ton weight of coal, if that were the force applied, would have to be permanently in opposition; to restrain it for a limited time, sufficient force could be generated by consuming, say, one hundredweight of coal. The term we shall employ to indicate the measure of the owner's opposition to this limited transfer or of a non-owner's desire for it, is HIRE-VALUATION. In common parlance it receives different names in relation to the different kinds of things which are so temporarily transferred; thus, the hire-valuation of land and of some other natural objects is called *rent*; of human faculties, *wages*, *salary*, or *fees*; of animal force and machines for applying other forces, *hire*; of money, *interest*. A subject of high importance in the science is, we shall see, the investigation of the causes which determine the proportion between the valuation of anything and its hire-valuation.

HIRE-VALUATION of anything, then, is the measure of the owner's opposition to a temporary relinquishment of his full legal estate therein, or of a non-owner's desire for the temporary acquisition of certain rights pertaining to the owner.

To make clear what is meant by hire-valuation we must depart for a little from abstract terms and refer as illustrations to some of the concrete transactions of communities. A horse or a locomotive engine may be hired out for a term, and, at the end of the term, the same horse or the same locomotive is returned to the owner. If coins (i.e., money) be similarly hired out,

the identical coins are not necessarily or probably returned, but others equal in fineness and weight to the original coins when hired. There are thus two sorts of hiring, viz.: (1) Hiring in which the identical things hired are, at the end of the term, returned to the owner; and (2) hiring in which, at the end of the term, things of like quality and quantity, but not necessarily the identical things hired, are returned to the owner. As all mundane things perish, change and decay, it is evident that, on the first sort of hiring, the things hired out, when returned, must have undergone some amount of deterioration or change, and the money paid for such hire will include something in addition to hire-valuation proper; it will include the valuation of such portion of the things hired, as may be considered consumed or absolutely transferred while they have been in the possession of the hirer. Such deterioration or change may be due to many causes, differing with every class of things: the hire-valuation of a horse, a locomotive, or a wagon, hired out for, say, a year, will include, in addition to hire-valuation proper, an equivalent for the reduction in the valuation of each after a year's work; in the case of the horse it will include also an equivalent for the risk of death during the year, unless such risk should be undertaken by the hirer; in the case of the locomotive or wagon will be included a similar equivalent for the risk of accidents. Some of the things so hired out, in addition to this deterioration, consume in their use certain products; thus a horse consumes fodder and corn, a locomotive or a steamboat consumes coal, oil, &c. Sometimes the owner of the thing hired out agrees to furnish also these products, and charges a higher rent or hire to cover the valuation of such products.

Hire-valuation, for the purpose of this book, must be understood as the residue, after eliminating from such rent, hire, &c., all that is included for depreciation or change, and all that is included for the valuation of products consumed in working and maintaining the particular thing which is hired.

With regard to human faculties which are hired out for wages, both deterioration and maintenance enter into the exchange. This becomes clear if we consider the case of a slave-owner, hiring out his slaves and undertaking to maintain them. He would base his calculation of what he must charge for their hire exactly the same as if they were horses—so much for cost of maintenance, so much towards replacing them when old, so much for risk of death or injury, and so much for hire-valuation. In the case of free men hiring themselves out, the question of hire-valuation is more complicated, and we must defer its consideration.

The words valuation and hire-valuation as defined express the measure of value, whether it be the owner's measure or the non-owner's measure. But it is evident that these measures, applied to the same thing, may differ greatly. A collector of antiquities, for example, may regard some of his possessions as almost beyond valuation; if there be other men with similar tastes, they may be willing to make great sacrifices to obtain such antiquities, but not so great as to tempt the owner to transfer the legal estate in them. Now suppose the collection, on the death of the owner, to pass to a spendthrift son, who regards the whole lot as rubbish, and, if necessary, would barter them for a horse or for the pleasure of an orgie. The son will then doubtless exchange them, but not necessarily at his own valuation. A competition will arise among those desirous

of acquiring them, and the son will dispose of them to the one whose valuation, expressed by his offer, is the highest. On the other hand, the purchaser from the son, if forced by competition, might have been willing to give more than the son accepts. These phenomena will require further consideration in the following chapters of this book; at this point we wish only to make clear the following three definitions:—

OWNER'S VALUATION of anything is the measure of the owner's desire to retain it.

BUYER'S VALUATION of anything is the measure of a non-owner's desire to acquire it.

MARKET VALUATION of anything is the highest of the buyer's valuations offered to the owner to induce an exchange.

These terms will apply to hire-valuation as well as to valuation, as the context will show which is meant, without always using such circumlocutions as owner's hire-valuation, &c.

PRICE is the expression of a valuation in terms of money, the medium of exchange. Its use in relation to the science of Human Economics is akin to that of specific gravity in Natural Philosophy; and as water, the common denominator of weight, is itself subject to variations, from the effect of influences which affect the weight of other bodies, so the value of money is for like reasons inconstant.

CAPITAL is everything in which an individual or group of individuals has a legal estate and for which there is a buyer's valuation.

CAPITALIST is the owner of capital.

LIABILITY is a legal obligation on the part of an individual, group of individuals, or community

to transfer to another individual, group of individuals, or community the legal estate in any form of capital.

WEALTH is capital less liabilities. The wealth of an individual or of a community is therefore his or its capital, less his or its liabilities.

Our definition of capital—private property for which there is a buyer's valuation—extends the meaning of the word beyond that usually attached to it by economists; the reason for this extension will become apparent as our investigations proceed. Capital, for our purpose, is the creature of human laws, compounded of the two institutions private property and exchange; it means such private property as is exchangeable because some one desires to acquire it, or the use of it, from the owner. It thus not only includes most material objects, but also immaterialities, such as human faculties, debts, obligations, patent rights, &c. On the other hand, the definition excludes everything, however much prized by the owner, whatever sacrifice he may have made to acquire it, such as a family relic, unless some other person is ready to give in exchange for it something else also possessing a buyer's valuation. The quality of capital is thus due to extrinsic causes; the same thing may at successive periods acquire the quality, lose it and re-acquire it.

As we proceed, we shall find that the problems of production and distribution collect around the relative valuations of the different forms of capital and on the determination of a unit of valuation, if such can be discovered. It will aid our investigations to that end, and make clearer our definition, if we attempt a classification of the various forms of capital.

In our first book we found that the ends of production are the successive gratification of human impulses, according to their relative strength : first, the impulse for prolonged life ; next, the sexual impulse, and then a crowd of miscellaneous impulses, dominated by a desire for luxurious ease. It is not, therefore, conceivable that anything can have a buyer's valuation which does not conduce directly or indirectly to the gratification of such impulses. We also laid down that, in common with all forms of animal life (p. 48), the human race seeks to satisfy its wants with a minimum of personal exertion, and to this is traceable the inception of a buyer's valuation.

Let us suppose all individuals in the civilised world to take stock simultaneously of their capital, i.e., of such things as other individuals would offer something valuable to acquire or use ; into such stock of capital would manifestly enter (1) the elements of production, and (2) the various products then existent.

The elements of production, we found, are suitable natural objects, force and intelligence. Natural objects we divided into three classes, distinguished according to their characteristics as undiminishing, unreplenishing, and replenishing objects. In connexion with undiminishing objects a buyer's valuation may arise, for, although by their nature the quantity obtainable at the most accessible site is inexhaustible, nevertheless that site may be private property, and the buyer's valuation would be measured by the equivalent of the exertion saved, compared with less accessible sites ; the water in a narrow inlet of the sea, bringing sea-water near a large inland town, might acquire a high buyer's valuation. Many unreplenishing and replenishing objects acquire a buyer's valuation

in situ, representing the saving of exertion compared with other similar objects, less accessible, which are simultaneously required; the royalty paid on coal is an illustration. In all these instances the valuation may be attributed to the site instead of the object appropriated at the site, but for our present purpose the distinction is unimportant.

Force, the second element of production, we divided into three classes, distinguished as human, cosmic, and produced. Human force is practically inseparable from intelligence, and in connexion therewith is considered below; produced force, as regards its valuation, is the same as other products, which are also referred to below. Cosmic force is running to waste in enormous quantities all over the world, and acquires a buyer's valuation only when its situation enables it to be utilised in production with advantage over other supplies of force; a waterfall, for example, suitable to turn machinery, would have no buyer's valuation in an unsettled part of Labrador, but would have a large valuation if in the neighbourhood of London. It is more correct to attribute the valuation, in this case also, to the advantageous site than to the force.

Intelligence, the limited element of production, we found exists only in individuals of the human species, and, with unimportant exceptions, is always associated with and inseparable from human force. The distinction between human force and intelligence is of prime importance in Natural Economy, but ceases to exist in relation to buyer's valuation; a man does not simultaneously sell his intelligence to one person and his force to another, but the one accompanies the other, and, if it be not utilised, is simply lost. We will adopt the phrase *average human faculties* to represent a man

of ordinary strength, endowed with ordinary uneducated intelligence. The vast majority of the race possess ordinary muscular force, and sufficient intelligence to apply such muscular force, as a simple force, in the work of production. Such average faculties constitute the unit; there are afflicted people whose faculties relatively would have to be expressed by a fraction, but they are not, under existing conditions, sufficiently numerous to take note of in this branch of Human Economics. We found in our inquiry into Natural Economy that a higher intelligence is required for the complicated processes of modern production, and that this higher intelligence is called forth by a process of education, involving a consumption of intelligence. This higher intelligence, in view of its greater powers of production, would, under normal conditions, manifestly have a higher buyer's valuation than ordinary average faculties; in a less degree also a man who had developed great muscular power would acquire a higher valuation.

Products must, in normal conditions, have a buyer's valuation, if they be such as comply with the definition of the term adopted in the first book, i.e. (p. 13), things discovered or evolved necessary directly or indirectly to satisfy the attainable requirements of any of the species; in view of the conclusions drawn in Chapter VIII of the former book we may modify this definition to read, such things 'potentially available directly or indirectly for the gratification of the impulses of any of the species.' Similarly, natural objects which have been acted upon by processes of production, but which are still inchoate, i.e., not available for consumption until subjected to further processes of production, will also have

a buyer's valuation if, by acquiring them, a buyer reduces the exertion necessary for the evolution of a needed complete product. The value of products, alike complete and inchoate, proceeds from the principle restated above, that, in common with all forms of life, the human race seeks to satisfy its wants with a minimum of personal exertion. If another has done work, the result of which, if acquired, will save exertion to the buyer, he will obviously, if he have the means, give something in exchange therefor.

The foregoing analysis of the causes which infuse value is concerned with production, and deals only with value which inheres in the product, complete and inchoate, fixed and moveable, or in the elements used up directly and indirectly in evolving the product. Value also arises in connexion with consumption or in bringing together the producer and consumer; the sites adjoining the streets of large cities are the objects, from this cause, of buyers' valuations on an enormous scale; these we shall deal with more fully hereafter. Such valuation may be considered either as entering into the product, in bringing it to market, or as the valuation of the facilities afforded to the consumer in finding all he wants at hand; for our present purpose it is only necessary to note that the value inheres in the site; in another class, such as the sites of houses in fashionable quarters, the valuation has clearly nothing to do with production, but has relation only to the whim of the consumer.

All the foregoing are material forms of capital, inhering in natural objects, in products, or in individuals of the species. Among communities where just laws prevail, certain immaterialities arise which

conform to our definition of capital. A debt, for example, due from A to B, when A is known to be solvent and law is strong enough to prevail, possesses a buyer's valuation sometimes as high as that of the materiality which is owing; as examples we may instance a note of the Bank of England or the Banque de France, or a bill accepted by Rothschilds. Debts or obligations are the reciprocals of liabilities which we have defined above, i.e., the debt which from B's standpoint is capital, from A's point of view is a liability or deduction from his capital when estimating his personal wealth. For the purpose of our further investigations we wish to divide this law-based capital into two kinds, accordingly as it is a present or future right; a bank-note or a cheque on demand is an illustration of the former, an annuity or a promissory note due at the expiration of six months an example of the latter. The former we will call legal rights *in esse*; the latter, legal rights *in posse*. In the latter we also include the rights which in a civilised community are accorded to an inventor (see First Book, page 92), provided they possess a buyer's valuation.

Another immaterial form of capital in a law-abiding community are alienable reputations, including those entities which in commercial language are called goodwill, trade connexion, &c. They are of two kinds, viz., personal and situational. The goodwill of a solicitor's business is an example of the former; that of a licensed house of the latter. The personal reputation of this class is distinguishable from the higher intelligence called forth by education, which is referred to above, in that it is alienable. A barrister's or a consulting physician's reputation is not alienable, and, as capital, is destroyed by the death of the man who

possessed it; a solicitor's or a general medical practitioner's reputation is to a considerable extent alienable, and possesses a buyer's valuation after the death or retirement of the man who has acquired it.

Another form of capital, which does not fall under any of those enumerated, are innate superiorities of human faculties, which in their highest form are called genius. These cannot be acquired by any process of education, but, in order that they may become valuable, require generally to be associated with skill obtained by education. Our great poets, dramatists, artists, musicians, vocalists, and composers are examples of this class of capitalists.

These various forms of capital as defined above we will classify, in view of our further investigations, as follows :—

1. Moveable natural objects.
2. Moveable objects acted upon by processes of production.
3. Advantages of site.
4. Fixed objects acted upon by processes of production.
5. Average human faculties.
6. Acquired superiorities of faculties.
7. Innate superiorities of faculties.
8. Legal rights *in esse*.
9. Legal rights *in posse*.
10. Alienable reputations.

It will be noted that in the foregoing classification we do not maintain the division based on the elements of production. Classes 1 and 2, for example, include not only natural objects constituting the basis of the ultimate production, but also natural objects and products employed only to generate force. Force used

in production also may, according to the particular circumstances, fall under any one of Classes 2 to 7 inclusive. The reason for relinquishing the original division is that, in their character as capital, the different classes acquire new relations to each other, altogether independent of the parts they fill in processes of production, and the classification is made in view of these new relations. At the risk of a charge of pleonasm we repeat what is involved in our definition of capital—that the foregoing classes are not capital in their nature, but only when they are conducive to the gratification of human impulses, and are drawn into the influence of the human institutions of private property and exchange. In relation to Class 1, for example, there are existing pine-grown forests in some parts of the world which, at the present time, are so difficult of access that they have not been appropriated, and have no buyer's valuation; these are not now capital, but, in the changing conditions of Human Economics, they may sooner or later become capital. Again, except in slave-holding countries, Classes 5, 6, and 7 are (unless by punitive laws) the property of the individual in whom they reside; in civilised communities he can hire himself out for the best buyer's valuation obtainable, and is therefore a capitalist; similarly a slave-owner, where the institution of slavery is permitted, is in respect of his slaves' faculties a capitalist. But away from civilised communities human faculties cease to be capital. Alexander Selkirk, for example, in his solitary island life, although he had all the elements of production and produced, had no capital, for the extrinsic causes necessary to give his possessions the quality of capital were wanting.

CHAPTER II

PRODUCTION

COSMOPOLITAN Economy presupposes the free operation of the natural laws of production, which were investigated in the preceding book. Natural and Cosmopolitan Economy, as understood and defined for the purpose of this book, stand in a similar relation to Communital Economy to that in which pure mathematics stands to applied mathematics. As explained in the former book (page 47), any single cause in Human Economics is rarely, if ever, allowed to have its full natural effect, and the conclusions of any *à priori* reasoning can only, in regard to the concrete problems of Economics, be affirmed as tendencies.

The great increase, *ceteris paribus*, in the quantity of products per unit of intelligence resulting from intensity of production, coacting with the instinct of the human race, in common with all forms of terrestrial life, to satisfy its wants with a minimum of personal exertion, necessarily tends to raise intensity of production to the highest degree which the scale of production in any community will allow (for the distinction between scale of production, and intensity of production see page 47). We are not concerned in this book with the causes which lead up to intensity, or which bring about its resulting advantages. We assume as a postulate that, as an effect of such causes, intensity

of production obtains with its concomitants, private property and exchange, and the problem immediately before us is to investigate the phenomena of production in a human community under those conditions.

If we review production, as carried on under the institutions of private property and exchange, we find that all the elements acquire the attributes of capital and fall under one or other of the classes enumerated in the last chapter. The elements of production (see First Book, Chapter III) are, (1) suitable natural objects, (2) force, and (3) intelligence. Under civilised laws a property is acquired in a suitable natural object by the first legal appropriator thereof, and, if its transfer by exchange will save exertion to another man engaged in evolving a product into which it enters, it will acquire a buyer's valuation which converts it into capital. Force we found (see First Book, Chapter IV) to be of three kinds: Human Force, Cosmic Force, and Produced Force. Human force under free institutions is the private property of the individual in whom it inheres; where slavery is permitted it may be the private property of the slave-owner; in either case it has a buyer's valuation (or hire-valuation) in respect of the exertion it will save to another in the evolution of products. A cosmic force utilised in production is the property of its first legal appropriator, but, unless such force has an advantage over other similar unappropriated forces available for production, it would not acquire a buyer's valuation. Some such instances of valueless appropriations doubtless exist in newly settled countries, but they are not sufficiently numerous to need further consideration here. The legal estate in a produced force will necessarily be in the producer or producers, or in some one who has acquired it from

him or them by exchange; if its utilisation in production will save individual exertion which would necessarily be the purpose of its production, it would possess a buyer's valuation. Intelligence, the third element of production, is owned the same as human force, and for the like reasons possesses a buyer's valuation (or hire-valuation) and is capital.

None of the other forms of capital included in our classification (page 112) is an element of, but several of them are aids to, production, and such of them as enter into production acquire buyer's valuations only in so far as they reduce the exertion otherwise necessary to evolve products from the elements of production. If a man desire to produce bread, for example, he will acquire by exchange flour—a moveable object, acted upon by processes of production (Class 2)—and it will possess a buyer's valuation, representing the saving of exertion to the bread-maker, in acquiring the product in that state instead of evolving it from its elements. If the bread be required for a particular district, the producer will give something for an advantageous site (Class 3) as regards the delivery to him of the flour or as regards the delivery by him of the bread; his buyer's valuation will be calculated on the saving thereby of exertion, compared with other available sites. If a bread-making plant be already erected upon the chosen site (Class 4), he will be willing to acquire it by exchange, in view of the saving of exertion necessary for the erection of a new plant. If a skilled baker offer his faculties (Class 6) for hire, he will be willing to acquire the use thereof at a higher valuation than those of one possessing in himself only force and uneducated intelligence (Class 5); the faculties of a man of special natural ability for the business (Class 7)

would obtain a yet higher valuation. To minimise exertion in the conduct of his business, the bread producer will convert his finished product into debts, will receive other debts by means of cheques or bills in exchange for the original debts, and will assign such debts in exchange for the flour, &c., acquired by him; these forms of capital fall under Classes 8 and 9. If any patent process of heating his ovens, whereby exertion may be saved, be brought to his notice, he will acquire by exchange the right to use it (Class 9); and finally, if he can acquire a business with an established connexion (Class 10), whereby exertion in creating a *clientèle* and exchanging his final product will be saved, leaving him free to apply himself strictly to production, such a connexion will doubtless have a considerable buyer's valuation in his eyes. But all of these forms of capital, it will be seen, are not essential to the production of bread; none of them was available for Selkirk on his lonely isle; they are only aids available to a producer, under the circumstances of existing civilised communities.

If any process of production under conditions of intensity and under the institutions of private property and free exchange be analysed, it will be found to resolve itself into simple amalgamation of several forms of capital. This is practically obvious from the enumeration of the forms of capital given in the preceding paragraph, which may or must be amalgamated to produce bread; as this fact lies at the root of all our subsequent conclusions in this book, we will illustrate it more fully. The figures in parentheses in the next paragraph and in the remainder of this chapter refer to the numbered classification of capital in the last chapter.

Let us then suppose that a man, possessing a large amount of money (2) or a large credit balance with his bankers (8), determines to build blast furnaces and manufacture pig iron. He will first hire by money payment (2 or 8) the faculties of a man possessing special technical knowledge (6), and under his advice he will purchase a suitable site (3) from the owner by giving him money (2) or a cheque (8) in exchange. (Purchasing or hiring may be understood as exchanging money or debts for the thing or faculties bought or hired, so we shall not always give that reference.) He will then, under the like advice, purchase in the order required bricks, lime, sand, ironwork, boilers, pipes, blast engines, and all the requisite materials (2) (being all products), and will hire the faculties of skilled artisans (6) and labourers (5) to proceed with the work of construction. When it is finished, the owner, as a result of all these exchanges, will have parted with a certain quantity of money (2) or debts (8), and will have acquired a blast furnace complete (4), advantageously situated (3), with all necessary tools and appurtenances (2). Such furnace, tools, and appurtenances will constitute a product, evolved by the amalgamation of all the various capitals which, as indicated, he has acquired in exchange for his money or debt owing by his banker.

The capitalist who has thus acquired the blast furnace is now ready to commence the manufacture of pig iron; but this involves an entirely new set of amalgamations. In order that we may have before us the whole process, we will give here an actual weekly cost sheet of a furnace. A cost sheet, we may explain, is a summary of the working, showing what the furnace has produced and what, in quantities and

price, such production has cost. Calculations are then made to ascertain what has been the average cost of the pig iron in respect of the different heads of cost. The cost sheet is as follows:—

Pig Iron produced . . . 595 tons.		Castings produced . . . 22 tons.			
				Per ton of product	
				£ s. d.	
				£ s. d.	
Coke used(compounded of cost of coke at colliery and carriage thence) . . .		Cost	953 12 0	1 10 11	
Ironstone used(similarly compounded) . . .		Cost	672 1 0	1 1 9	
Limestone used (similarly compounded) . . .		Cost	93 15 0	0 3 1	
Wages and Works Salaries			185 13 4	0 6 0	
Stores			19 5 0	0 0 8	
Castings			7 10 0	0 0 3	
Rates and Taxes			10 5 0	0 0 4	
Repairs and Depreciation of Plant			85 0 0	0 2 8	
Royalty			30 7 0	0 1 0	
Selling Commission			20 11 4	0 0 8	
Office and General Charges			25 12 0	0 0 10	
Bad Debts			20 11 4	0 0 8	
				<u>£3 8 10</u>	

Let us now translate this into the language of Economics, with references as before to the class of capital amalgamated.

Coke (2) is obtained in exchange for money (2) or debts (8), but before it can be used it has to be

transported from the colliery to the furnace. Another capitalist, a railway company, undertakes the carriage thereof in exchange for money or debts; such carriage includes hire of the railway (4), hire of the wagons and engines (2), hire of human faculties (5 and 6), and the valuation of what is really absolutely transferred (coal, oil, wear and tear, &c.; see page 103) in these several hirings (2 and 4).

Ironstone and limestone are similar to coal, and their acquisition calls for a similar series of exchanges.

Wages and salaries, which enter into pig iron and all other products, will be the subject of further investigation in this book; for our present purpose they represent only the money paid to acquire two classes of capital, the faculties of labourers (5) and of skilled persons (6).

Stores is a name given to oil, grease, packing, and small articles which are consumed in connexion with the production of pig iron. They are usually purchased from other capitalists in the state ready for immediate utilisation, and fall under Class 2 of capital.

Castings are the product of the furnace itself; they fall under Class 2 of capital, and are resolvable into the other forms of capital entering into the cost sheet.

Rates and taxes represent the share paid by the pig-iron producer, for the cost of services in the benefit of which the whole community, or a considerable portion, shares with himself. Such services are numerous and varied. A large part of them is concerned with protection alike from enemies outside the community and from marauders within. Under this head fall the large sums paid out of the rates and taxes for the maintenance of the Army, Navy, Law Officers, and Police; these expenses are connected with the question

of risk, which, we shall see, enters largely into the ultimate valuation of products. We are at this point only concerned with the fact that a capitalist requires to hire Classes 5 and 6 of capital to protect his capital, and for the most part, instead of doing this directly, he pays as rates and taxes his assessed proportion of the cost to the community of the general and particular protection secured by its laws. Other portions of the rates to which he contributes are more directly concerned with production, such as the amounts expended upon construction and repairs of roads, scavenging, lighting, &c., whereby the capital amalgamated in the production of pig iron, in common with all other neighbouring industries, is economised. Another considerable portion of the rates and taxes is expended in the elementary education of intelligence (see First Book, page 39), whereby the efficiency of Class 6 of capital, which enters into all products, is improved. The greater portion of rates and taxes, if thus followed to its ultimate application, will be found to represent the acquisition of capital, falling under one or other of its ten classes, used up, either in amalgamation with and improvement of other forms of capital, or in the protection of capital necessary under the institutions of private property and exchange. The portion represented by poor rates is differently applied, but it is not necessary at this point to deal with it.

Repairs and depreciation of plant represent the amount by which the furnace and its appurtenances, which the proprietor obtained in exchange for his debts and money (see page 118), is continually wasting or consuming; the repairs represent the replacement of parts actually worn out, but the proprietor further

calculates that, after the production of so many thousand tons of pig iron, certain extensive repairs (such as relining the furnace) must be made, and after a further production the whole plant will have to be constructed afresh. The amount entered in the cost sheet represents the actual expenditure on repairs, *plus* the valuation of that portion of the furnace and appurtenances which, having regard to the estimated life of the furnace, may be considered as consumed or amalgamated in one week's production of pig iron; the loose appurtenances about a furnace are generally susceptible to a more rapid depreciation. Repairs and depreciation fall under Class 2 or 4 of capital, accordingly as they relate to loose or fixed plant respectively.

Royalty, in the particular cost sheet with which we are dealing, is the amount paid for the ironstone as it exists in the earth; the owner of the land grants a lease with powers to mine and carry away the ironstone; he simply sells the ironstone *in situ* in the earth; all the expense of reaching and extracting it is borne by the leaseholder, and, for convenience of calculation, the royalty or purchase money of the ironstone, instead of being assessed at a small rate per ton on the weight of ironstone extracted, is assessed at a larger rate per ton on the weight of pig iron made from the ironstone. The capital thus acquired (the ironstone *in situ*) falls under Class 1. The term 'royalty' is also applied in ironmaking to the amount paid for the use of any improved patented process; such royalty is usually assessed on the ton of pig iron, and the benefit acquired falls under Class 9 of capital.

Selling commission is the amount paid to a qualified agent for his services in bringing the finished product, pig iron, before other capitalists, who require that

particular product for the purpose of fresh amalgamations or for re-sale without amalgamation. The pig-iron producer requires to re-exchange his product into money or debts, part to be applied to the acquisition of the necessities and luxuries of life for himself, and part to continue the series of exchanges and amalgamations involved in the production of pig iron. The agent, whose services he acquires for the purpose of effecting such re-exchange, must be a man of education and possess natural qualifications for that particular occupation; his services fall under Class 6 or 7 of capital.

Office and general charges are compounded partly of services and partly of products, and fall under Classes 2 and 6. The item includes the cost of books, stationery, &c., the services of clerks, and other similar expenses involved in the orderly and economic supervision of the various amalgamations of capital necessary to the production of pig iron.

The last item, bad debts, in the cost sheet under review, is not capital amalgamated in production, and does not in fact enter into production, but we have not excluded it, as we wished to present the complete view of the capitalist preparing a product for the market. It is one of many similar items which may be called risk, and which, although not entering into production, affect in a considerable measure valuations and price. The risk to which the item relates is that of the sudden destruction of value in capital falling under the 8th or 9th Class, for which the capitalist producer generally exchanges his pig iron. If the debtor 'fail,' the capital of other people represented by his liabilities is destroyed. The producer of pig iron has to encounter that risk in connexion with all

his production ; his experience has taught him that, notwithstanding all usual precautions, he will have to submit to a percentage of losses of this nature, and in the cost sheet we are examining an insurance premium to cover such risk is added to the cost of each ton of iron, when determining (which is a principal object of a cost sheet) at what price an exchange of the product can be made with resulting profit. Risk, however, is no part of production in the terms of our analysis : we shall recur to it when dealing with dissolution and valuations.

The process of production, roughly analysed by the cost sheet which we have thus traced to the several classes of capital, introduces to us two classes of individuals who fill important and distinct parts in nearly all production under conditions of intensity. We shall frequently refer to these classes, and we will at this point give them distinctive names shortly descriptive of their functions.

PRODUCTIVE-AMALGAMATOR is a capitalist at whose risk are made the amalgamations necessary to production.

In the production of pig iron which we have roughly analysed, the productive-amalgamator is the man who originally possessed the money or credit balance with his bankers (see page 118), and who then entered upon the series of exchanges and amalgamations which resulted in his becoming the possessor of pig iron in lieu of money or debts due from his bankers. His ultimate motive was to secure the power of gratifying his impulses (see First Book, Chapter VIII) more completely than his original capital would allow, and, to that end, he hoped to obtain by the sale of his pig iron more capital, in the form

of money or debts, than he parted with in the several amalgamations indicated by the cost sheet. The laws controlling the amount of such capital for which the pig iron will exchange will be considered in a subsequent chapter, but we may anticipate the conclusions there drawn so far as to say that there is no certainty that he will receive as much capital for his pig iron as it has cost him. In that respect it is produced at his risk; as also in respect of bad debts, above referred to, and of accidents and other eventualities which we shall investigate later. On the other hand, occasions arise when he is enabled to exchange his pig iron for considerably more than, perhaps twice as much as, the price of the capital amalgamated in its production. The other capitalists, whose capital was consumed in evolving the pig iron, are not concerned either with such risk of loss or the possibility of excessive profit. Their interest in the various processes ceased when they received the agreed money or debts in exchange for their respective capitals. In relation to all products the productive-amalgamator is thus separate and distinct from all the other capitalists whose various capitals enter into the product. He is not absolutely essential to production under conditions of intensity, but appears to have justified his existence by resulting economical advantages to the community.

TECHNIC-AMALGAMATOR is a capitalist for whose benefit, in a state of freedom, have been made the amalgamations of capital necessary to endow him with acquired superiorities of faculties (Class 6 of capital).

The need of educated intelligence and the amalgamations necessary to its acquisition were shown in

the preceding book (page 38). To a considerable extent most productive-amalgamators are also technic-amalgamators, and have acquired the knowledge necessary to control most of the processes connected with the particular product, to the evolution of which, under conditions of intensity, they devote themselves. But recently the utilisation of non-human forces and of aids to intelligence (see First Book, Chapters IV and V) has been accomplished by means so ingenious and diverse, that mechanical science is daily becoming more specialised, and a complete knowledge of everything pertaining to any one product can hardly be grasped by one individual. Our pig-iron producer we may suppose to have acquired for himself all the usual technical knowledge connected with iron-making; he would nevertheless probably hire the faculties of civil engineers in fixing on the site of and in laying out his plant, of hydraulic engineers in relation to his water supply, of mechanical engineers in determining the best form of blast engines and boilers, of analytical chemists in connexion with the coal, ironstone, and flux fed into the furnace. These various experts would probably be unconnected with the evolution of any product at their own risks; they would have acquired superiorities of faculties, each in his special department of knowledge, and the use of such faculties would be the capital which, under the conditions of intense production, they had to offer for exchange. Under the head of technic-amalgamators similarly fall all the learned and skilled professions—barristers, solicitors, physicians, surgeons, dentists, accountants, surveyors, patent agents, land agents, valuers, &c.—and also all skilled artisans, and everybody who has acquired any special knowledge or

dexterity available to be hired in the processes of production.

In the definition of a technic-amalgamator we have used the phrase 'for whose benefit,' in place of the corresponding phrase 'at whose risk,' in the definition of a productive-amalgamator. The reason for this variation is that the capitalist, who risks the money or debts necessary for the acquisition of the desired superiorities, is generally the father of the intended expert. This is usually done in gratification of the impulse of paternal affection; in a free country the father has no legal right to any return for the capital of which he so divests himself, and the acquired superiorities become the absolute property of the individual in whom they are fixed. In a state of slavery capital would be similarly amalgamated with the natural faculties of a slave from motives of ultimate profit. Such amalgamations would only form part of the ordinary processes of a productive-amalgamator, analogous to the training of a horse, and a slave so endowed would not come under our definition of a technic-amalgamator.

Under the institutions of private property and exchange a large body of capitalists exists whose services are hired for the satisfying of human requirements, but in ways not connected with production. It would be extending the term 'products' too widely to include therein the actor's art or the priest's ministrations; but each of them possesses capital consisting of Class 5 combined with Class 6, and perhaps Class 7; and, in so far as Class 6 enters into his value, it would probably be acquired by previous amalgamations of capital. Many forms of capital falling under the three heads named enter into amalgamations resulting

in material products, but in the case of the actor and the priest the acquired superiorities of faculties are not fitted for amalgamation with natural objects, and do not therefore evolve products in the terms of our definition (see First Book, page 13). In relation to the problems of exchange, however, they are on the same economical plane as the technic-amalgamator concerned with production. Similar services, unproductive for the most part, are offered in exchange by the great body of domestic servants, and affect greatly the economical status of women, whose position we shall refer to in a subsequent chapter.

The whole of the amalgamations of capital, necessary to evolve from natural objects products ready for direct consumption, are rarely undertaken by one and the same productive-amalgamator. This is exemplified in the manufacture of pig iron referred to above. The trade of smelting iron ores in blast furnaces is considered complete in itself, and is commonly the sole business of the amalgamator who enters upon it. It is, however, neither the beginning nor the end of the process of production. The natural object, which is the basis of the ultimate product, is the iron ore lying as left by Nature in the crust of the earth. The acts of mining it and of transporting it to the furnaces are some of the processes of production, and these initiatory processes are frequently undertaken by one or more amalgamators other than the pig-iron manufacturer. Further, the pig iron when made is not a product ready for direct consumption. If the amalgamation of capital stopped there, nothing of use to the race would have been evolved. Before the natural object is transformed into a product ready for consumption by the species,

one or more fresh series of amalgamations have to be carried through, such as are involved in fashioning the pig iron into rails or bars, plates and sheets, and the latter three must be refashioned by blacksmiths, wire-drawers, wire-workers, galvanisers, shipbuilders, tinned-plate makers, tinned-plate workers, or some one or more of the other numerous trades centred around the utilisation of iron, each of the processes being probably undertaken at the risk of a fresh productive-amalgamator. This multiplication of productive-amalgamators does not appear to carry with it any economic advantages such as accompany division of labour (see First Book, pages 42 and 51). On the contrary, economic advantages appear to result from the same amalgamator undertaking several processes. The cause of the multiplication appears to lie in the wide separation and distribution of many of the various forms of capital, which have to be brought together to evolve most products. We are not, however, in this book concerned with the cause, but with the fact, which we shall see later has an important bearing on the relations of production and consumption.

In order to avoid cumbrous periphrases, we will adopt terms to express the difference between products ready for direct consumption by the human species, and products which prior thereto have, like pig iron, to be subjected to fresh amalgamations. While retaining for the word 'products' the original meaning attributed to it (see First Book, page 13) of 'natural objects discovered or things evolved therefrom which are necessary, directly or indirectly, to satisfy the attainable requirements of the species,' we will call—

INCOMPLETE PRODUCTS, those which require further amalgamations of capital to fit them for direct consumption ;

COMPLETE PRODUCTS, those which are fitted for direct consumption.

Of the vast majority of products there is practically no physical limitation to the quantities which can be evolved. The practical inexhaustibility of all natural objects was discussed in the first book (pages 21 to 25), and it is only necessary to apply sufficient force and intelligence to such objects to evolve the products based thereon in any quantity. That, however, is only a physical, not an economical truth. In our first book (Chapter V) intelligence was shown to be a limited element, and, when considering the objective limits of production, it was shown (page 73) that non-staples could not be produced until surplus products of staples are available. If a natural object entering into a certain non-staple were so inaccessible as to call for the combined faculties of, say, three-fourths of the community to obtain it in the desired quantities, and if the proportion of surplus products to gross products as regards staples were at the time one to one only, it is evident that three-fourths of the community could not be told off to obtain the wished-for product, and its production in the quantities desired, though physically possible, would be economically impossible.

On the other hand, there are some few products which have special individual qualities, and cannot be evolved in unlimited quantities ; most of these are produced only as non-staples for the luxurious. One bushel of wheat is indistinguishable from another, but one diamond is not identical with another. No physical limit exists to the possible production of diamonds, but,

by the expenditure of any conceivable quantity of force and intelligence, it is not possible to ensure the production of a second Koh-i-noor. The like distinction marks many of those products into which capital of the 7th Class (innate superiorities of faculties) enters. Genius is not producible at will, nor, therefore, the products into which it enters. Paintings of some sort, such as require only acquired superiorities of faculties (Class 6), can be indefinitely multiplied, but not the works of an artistic genius; moreover, all the works of the same artist differ among themselves, and after his death the further supply of any of his works must cease. Some products evolved from capital of the 3rd Class (advantages of site) are also not multipliable. This form of capital enters into products, *inter alia*, as 'the foundation on which habitations and other of the more permanent products are erected' (see First Book, page 24), and in that connexion no two sites are identical.

This distinction in products becomes of prime importance in dealing with the problems of value, and we will adopt special terms to distinguish the two classes.

MULTIPLIABLE PRODUCTS are those to the evolution of which, in any required quantity, there is practically no physical limitation.

SINGULAR PRODUCTS are such as are each *sui generis*, and cannot be evolved in unlimited quantities.

MULTIPLIABLE OBJECTS and SINGULAR OBJECTS will be used with corresponding meaning, in relation to natural objects which are the basis of products.

CHAPTER III

DISSOLUTION OF CAPITAL

IN our first book (page 13) consumption was defined as 'the using up of products by individuals of the species in satisfying, directly or indirectly, their attainable requirements.' We intend to continue the use of the word exclusively in that sense, but, when we trace out the fate of products under the institutions of private property and exchange, we find that a wider term is required to include all that may happen to them. Under these institutions and their concomitant, intensity of production, products are evolved in the anticipation that they will upon evolution become capital, i.e., acquire a buyer's valuation; besides consumption as defined, there are other ways by which their existence may cease, or by which the attribute of buyer's valuation, which constitutes capital, may be wholly lost or may deteriorate. Such other ways are important factors in the problems of value and exchange. The word 'dissolution,' with which we have headed this chapter, will be adopted in this book as the wider term, to include all the ways in which the destruction or deterioration of products and other forms of capital, as such, may occur.

There are three ways in which in Human Economics products and other forms of capital are dissolved, viz., (1) by decay, (2) by destruction; and (3) by consumption; these we will now consider separately.

Decay. By the term 'decay' we wish to express the wasting away of products and other forms of capital by cosmical causes, as distinguished from their destruction by accident or otherwise, and from their consumption in fulfilling the purposes for which, in relation to Human Economics, they are produced or exist.

Products, in all stages, complete and incomplete, are subject to decay; the exceptions to this rule are few and unimportant. Immediately the necessary amalgamations have been made, the constituents of the atmosphere, if not counteracted, seize upon the product and commence to dissipate its elements and destroy its integrity. The rate and effect of decay vary with the different kinds of products. With what are known as perishable goods—fresh fish, meat, fruits, &c.—its action is swift; unless such products be consumed within a short time of their production, they may cease to be capital in the terms of our definition, and are voluntarily destroyed or abandoned. With other products, such as well-constructed buildings, surface roadways, oak timber, &c., decay acts slowly, and proportionately slight fresh amalgamations only are needed to counteract it. Between perishable goods at one extreme and stable buildings at the other, the various products decay in graduating rates of rapidity. Similarly, the effects of decay are diverse. Perishable goods, for example, which have ceased to be fresh goods, may either, if the decay be allowed to proceed far enough, become absolutely useless as products, or, if the decay be arrested in time, they may become the basis of fresh amalgamations resulting in preserved fish, meat, fruits, &c., and thus be given a new lease of life as products. Steel rails, which have rusted so as to be useless as

rails, are available as the basis of fresh amalgamations to produce either new perfect rails or other steel goods. Many of the old materials of a building pulled down because of decay are capable of utilisation in new constructions.

Decay of incomplete products is, in many instances, intermixed with consumption, so that the quantum of dissolution attributable to each cannot be distinguished. In the last chapter, when dealing with the item of the cost sheet called depreciation, we stated that it represented 'the valuation of that portion of the furnace and appurtenances which may be considered as consumed or amalgamated in one week's production of pig iron.' But some portion of this depreciation is due to decay distinct from the wearing away due to the continued use of the furnace in the amalgamations resulting in pig iron, and if the furnace were at rest the decay would go on.

Other forms of capital which are subject to decay are those which inhere in human faculties, and which constitute Classes 5, 6, and 7 in our enumeration of the several forms of capital. The limit of life approaches as certainly whether a man be producing, rendering immaterial services, or idle; the decay of faculties which accompanies age, though it may be hastened by overwork, excesses, &c., cannot be counteracted. Human faculties will be the subject of special examination in a subsequent chapter; at this point we wish only to note the fact that they are subject to decay.

The principal exceptions to this ruthless rule are products constructed of the noble metals and precious stones; in relation to any period of time entering into Human Economics, these products appear to be immune from decay in the terms of our definition.

Destruction. This term we shall employ in a special sense to include the results of various mishaps and miscalculations, whereby products and some forms of capital are lost or deteriorated. To trace out the diverse accidents possible to each form of products and other forms of capital would occupy volumes, and would be foreign to our present purpose; at this point we shall only indicate what kinds of dissolution the term 'destruction' is intended to cover. These are—

1. *Physical destruction*, such as arises from fire, flood, storms by sea and land, war, &c.
2. *Loss by breach of the laws of property*, as by the seizure, without physical destruction, of products by the community's enemies, by pirates and land-robbers, and sometimes by tyrannical rulers of the community. In these instances the destruction is only personal as far as the capital of the individual owner is concerned; the products may still be consumed. The effect on the individual is, however, the same as if his despoilers had destroyed their booty, and the liability to loss by such breaches of the law affects the problems of value in the same manner practically as the liability to loss by physical destruction.
3. *Loss by carelessness and mishaps in the processes of amalgamation.* This varies with each kind of product. By reason of division of labour the evolution of nearly every product involves the concentration of the work of a vast number of individuals. *Humanum est errare*, and the consequences of bad workmanship reveal themselves at every point. Sometimes the defect is patent, as in a piece of cloth carelessly woven;

at other times it is latent, and may not be revealed until other costly amalgamations with the defective product have been made. To produce perfect tin-plates, for example, requires not only honest workmanship on the part of those engaged in the final amalgamations, but also that the steel bars, the palm-oil and the tin, which are manipulated and brought together in the ultimate product, shall each be of the requisite good quality. The evolution of these incomplete products is generally undertaken by amalgamators other than the tin-plate manufacturer; defects are latent, and some of them can only be detected by the effects when the final product is evolved. A tin-plate manufacturer thus always expects that a portion of his products will be 'wasters'; the writer has known the percentage of wasters to be as low as 5 and as high as 30, but 10 per cent. is, we believe, considered to indicate the fair average to be expected from ordinary good workmanship and care. The losses due to carelessness are sometimes awful in their magnitude, such as the results of an explosion in a fiery mine through exposure of lights, of a boiler explosion due to inefficient inspection, of an explosion in a powder factory, &c. Many of the losses under this head are, however, attributable to pure mishaps which no ordinary care could prevent; internal defects in a casting or in a railway axle, resulting often in terrible destruction, cannot in the present state of knowledge be detected; with the extension of man's knowledge of the physical world mishaps

of this kind tend to diminish in number. The extent of the losses falling under this head, it will be noted, vary greatly. A box of 'waster' tin-plates sells usually for about twelve per cent. less than a box of 'perfects'; about ten per cent., as stated above, are wasters, and thus the loss, spread over the whole production, is small though continuous. On the other hand, the results of an act of carelessness in a mine may be the destruction of hundreds of units of human faculties and of the whole mine and valuable machinery appurtenant to it.

4. *Loss by miscalculation.* The main difference between the dissolution falling under this head and that under the preceding is that, in this class, the product may be perfect as a product, and its deterioration is attributable only to the fact that it exists when or where it is not wanted. Fashion is the chief destroyer or diminisher of value in this manner. A productive-amalgamator, concerned with the production of fashionable goods, makes his estimate of the quantity he will probably be able to sell, and, if he has over-estimated, he will have a stock left on his hands, the value of which will be more or less deteriorated and may be practically destroyed, not from any defect inherent in the product, but from change of fashion. Other examples of this class of losses arise in connexion with houses or shops built unsuitable to a neighbourhood, or where the character of the neighbourhood has changed; mines sunk or factories erected in places where the products cannot be evolved profitably; permanent erections in new

settlements which are afterwards abandoned for more favourable sites, &c. Advantages of site (Class 3) are destroyed along with the houses or shops built upon such sites. Under this head may also be placed the loss by bad debts, which it will be remembered constitutes an item of the pig-iron cost sheet, as it does, in fact, of nearly every cost sheet; the nature of the risk was sufficiently explained in our analysis of the cost of pig iron.

5. *Loss by obsolescence.* This form of destruction is similar to that last described, except that it cannot be guarded against by any conceivable foresight; it enters so largely into all production under conditions of intensity as to call for separate consideration. It is mainly attributable to the increasing operation of the inventive faculty, which, as shown in the first book (see page 40), is continuously increasing the quantum of force dirigible in production by each unit of intelligence. It enters into practically every branch of production, but one illustration will suffice. We have, as noted above, referred in the first book to the supersession of the hand-loom by the power-loom. The earlier power-looms applied to woollen yarns were deemed marvels of efficiency when they operated 30 shots per minute; the most modern looms, at the time of writing this treatise, give, with practically the same amount of supervision, 130 shots per minute. The improvement in this class of machinery has been more gradual than in machines utilised in some other branches of production, in which, by some startling invention,

a costly plant has quickly become obsolete, but at the present time there are many looms in perfect working order, equal to an output of fifty to sixty shots per minute, which are practically destroyed as capital, except for their fractional value as old materials. They cannot produce in competition with the modern looms, by which they are as completely obsoleted as the old hand-loom was by the early power-loom.

6. *Loss from fiscal changes.* This, like the preceding, cannot be guarded against. The fiscal changes causing this form of destruction are—
- (a) Those abolishing protection in a producing community.
 - (b) Those establishing protection in another community previously purchasing the product from the producing community.
 - (c) Excessive taxation of a product for revenue purposes so as to reduce its consumption.

In our first book (page 50) we pointed out the disadvantage in production of the small master, in competition with a producer on a large scale utilising automatic machinery. The following extract therefrom indicates the nature of this form of destruction of capital: 'The machine itself represents a large amount of capital consumed in its construction; if that original expenditure of intelligence be spread over a large production by the constant utilisation of the machine, there results a saving of the total intelligence consumed in the machine and its products; but, if the machine be not kept continually producing, the intelligence represented

in its construction has to be divided over a smaller quantity of products and may make the total consumption more than if the machine be dispensed with.'

The productive-amalgamator, who has created a costly plant for intense production which the existing demand justified, may suddenly find from such fiscal changes that he cannot exchange his product for money or debts sufficient to give a profit on, or perhaps even to reimburse, the money or debts he has to part with in the evolution of the product. In consequence the whole of his costly plant becomes valueless except as scrap, and is practically destroyed as capital.

Several of these forms of destruction affect human faculties and other forms of capital associated therewith. As regards human faculties (Classes 6, 7, and 8) we will at this point look upon their liability in this respect apart from the question of ownership. The institution of slavery has practically ceased, but we shall throw light hereafter upon obscure points by tracing its economical effects. Where freedom exists and only a man can own himself, if he be wholly destroyed the capitalist is destroyed as well as the capital, and in that respect the economical effect differs from that of the destruction of a slave when the capitalist, the slave-owner, survives; this difference is of special importance, as will appear in our subsequent investigations.

All the capital amalgamated with average human faculties to evolve a technic-amalgamator or a skilled slave (see page 125) may be lost by the unsuitability or natural incapacity of the individual. This risk of loss

obtains in nearly every skilled occupation, but is emphasised in connexion with the higher professions concerned with civil engineering, medicine, law, &c. There is usually no serious attempt to inquire into the suitability of a boy's faculties for a particular profession, but his dedication thereto is mostly due to family exigencies, to a parental whim, or to the inexperienced choice of the boy, and thus large amalgamations of capital are wasted in the attempt to endow him with superiorities of faculties which he cannot acquire or utilise.

Average faculties and acquired and innate superiorities of faculties may also all be deteriorated or wholly destroyed as capital by the like accidents which cause physical destruction to products, by attacks of the community's or of personal enemies, by miscalculation (as in training a boy for an over-peopled profession), by disease, and by dissolute habits. The last named cause unfortunately operates frequently with those possessing innate superiorities. A young man, with suitable or superior faculties adaptable to a skilled profession, becomes the basis of the amalgamations of capital necessary to qualify him as a technic-amalgamator. At this point the temptations of his age and surroundings come upon him, and in many cases the capital acquired is thereby lost or deteriorated. Sometimes, also, physical weakness and disease bring about the like result.

Acquired superiorities of faculties (Class 6) are also subject to obsolescence. The ruthless inventive faculty is continually discovering automatic machines to accomplish or minimise the work of skilled mechanics; such machines can frequently be directed by average human faculties (Class 5), and thus the

mechanic's acquired skill becomes unexchangeable, and ceases to be capital.

The effects of fiscal changes upon human faculties as capital are frequently very disastrous; obsolescence of faculties proceeds slowly though continuously, and mechanical arts are sufficiently allied to allow frequently the dribblets of acquired skill, thus continuously obsoleted, to be applied after a little training to some other form of production. But the destruction of an industry, by fiscal changes or otherwise, frequently destroys as capital the greater part of the faculties associated in the production. This is a loss to the community compared with which that of the productive-amalgamator's capital concurrently destroyed is often trifling. We shall have occasion to discuss this point in a subsequent portion of this book.

Alienable reputations, with which human faculties are closely associated, it will be remembered are of two kinds, personal and situational. The former, of which the business attached to a solicitor's office or to a proprietary article built up by advertisements are convenient examples, are subject to some of the accidents before mentioned, and in addition may be destroyed wholly or partially by the discontinuance of the causes to which such reputations are due, or by the rivalry of superior competitors. A solicitor's business thus may be diminished or ruined by continued neglect on the part of the principals, or by the competition of abler or more trustworthy men. The goodwill attached to a proprietary article appears to require for its maintenance continuous expenditure in advertising after its reputation is established; if that be neglected, or if a rival article be more

efficiently advertised, or be more advantageous to a purchaser in quality or price, the goodwill will be deteriorated or destroyed.

Alienable reputations which are situational are similar in many respects to advantages of site, and may be lost in similar ways; but in addition, without any deterioration of the site *qua* site, the reputation may be lost by means similar to those which may destroy an alienable personal reputation. A hotel, for example, in London may have acquired a reputation by advertisement and by the excellence of its accommodation; such reputation would be mainly situational, as the proprietor could not expect his *clientèle* to follow him if he removed to a distant site, but without any deterioration of site the hotel could lose its reputation by discontinuance of advertisement or by inferior accommodation.

Consumption. Incomplete products are consumed in *indirectly* satisfying the attainable requirements of the human race, i.e., they enter into fresh amalgamations, which result in complete products *directly* available for the satisfaction of human requirements. Some complete products may be consumed either in directly satisfying human requirements, or in fresh amalgamations to educe other complete products. Coal, for example, is a complete product, available for direct consumption by furnishing light and heat to the individuals living where it is available, but it may also be consumed in all the various processes, starting with the blast furnace, necessary to produce iron in some of the forms fit for direct consumption; water delivered by pipes in a manufacturing town may be applied for the evolution of power for productive-amalgamators, or for drinking and cleansing purposes. Coal

gas similarly delivered may be consumed for purposes of power or to afford light and heat in a dwelling-house.

Human faculties (Classes 5, 6, and 7 of capital) which are potentially available for productive-amalgamations, are also consumed in directly satisfying individual requirements, as soon as the point is passed at which surplus products arise. Domestic servants, body servants, public entertainers, and others similarly employed in procuring ease and pleasure for other individuals, are examples of this kind of consumption; also, inasmuch as women have force and intelligence available for production, the gratification of the second of the impulses—the sexual (see First Book, page 88)—beyond what is required for making good depreciation and for providing needed additional workers, is a similar consumption of faculties.

CHAPTER IV

SUPPLY AND DEMAND

WE have now to consider the relations of production to consumption under the institutions of private property and exchange. The terms 'supply' and 'demand,' have been used by Economists to express those relations, and we shall continue their use in the same sense: by demand, effective demand is meant.

The natural laws limiting supply and demand were investigated in the last two chapters of the first book. The boundaries fixed by those laws cannot be passed, and we shall presently restate those which affect our further investigations in this book.

All material forms of capital under the terms of our definition are necessarily either complete or incomplete products. The supply of every kind of complete product, under the institutions of private property and exchange, is subjectively limited by the effective demand for direct consumption of that particular product. No productive-amalgamator will continue to produce what he finds he cannot exchange for the products he requires. A restaurant-keeper, for example, who by a long series of exchanges transmutes his capital from its original form (money or debts) into food ready for direct consumption, will not continue such exchanges unless he can re-exchange such food into money or debts, and, as we shall

presently see, into more money or debts than he has expended in the numerous amalgamations. We mean to indicate the ultimate determination of the restaurant-keeper, as we shall find that he and nearly all productive-amalgamators have to work in the dark, and temporarily are continually getting ahead of the effective demand for direct consumption, which they only find out by the fact that they cannot profitably re-exchange their products.

The supply of every kind of incomplete products, under the like institutions, is limited by the effective demand for direct consumption of the complete product or products into which, by subsequent amalgamations, it enters. The owner of the blast furnace, for example, will, no more than the restaurant-keeper, continue his amalgamations unless he can re-exchange his product into an augmented amount of money or debts, the original form of his capital. Whether or not he can do this must depend ultimately on the aggregate effective demand for direct consumption of the various complete products into which pig iron enters. The distribution of an incomplete product such as pig iron is highly complex. It may flow in a dozen different directions, to iron-founders, rail manufacturers, steel manufacturers, tinplate manufacturers, wire manufacturers, &c., and each of these, again, will be but a fresh distributing centre of products still incomplete, which other productive-amalgamators take hold of for further diverse amalgamations. The final diverse complete products in each case may be six or seven times removed from the pig-iron producer, and only the productive-amalgamators evolving the final complete products are in touch with the effective demand for direct consumption; but such demand

must ultimately limit the supply of the pig iron and the various incomplete products evolved therefrom.

Supply, under the institutions of private property and exchange, is thus ultimately controlled by effective demand for direct consumption, and we have now to consider what causes, under these institutions, regulate such demand. We shall continue the use of the terms 'staples' and 'non-staples' with the meanings attached to them in our first book (page 68).

Presuming that a human community, being subject to the dominating impulses mentioned in the first book, (page 87), will first seek to maintain itself, we find that some of the causes affecting demand are objective, and others subjective. At the point, however, at which a community could produce enough only for existence and for making good depreciation (see First Book, page 45) in the state for the time being of civilisation, the objective and subjective causes would coalesce. The staples required would, under the institutions of private property and exchange, be produced with the advantages flowing from division of labour, and the quantities of each kind of such staples would be invariable, for the whole available intelligence of the community at such point would be condemned to their production.

Such a condition is, however, only theoretical, although something approaching it doubtless obtains among the Esquimaux and Laplanders. The action of the inventive faculty, as pointed out in the former book, tends to continually increase the quantum of production per unit of intelligence, and this tendency, in the present state of the world, is only slightly counteracted by the retarding tendency of unreplenishing objects and (where over-production takes place) of replenishing objects.

The extent of the effective demand for non-staples is limited objectively by the potential supply of surplus products, and subjectively by the purposes to which such potential supply is directed.

The objective limits tend to expansion—

- (a) By the increase of the population of the community up to the economical point (see First Book, page 73).
- (b) By the operation of the inventive faculty (see First Book, page 83).

The objective limits tend to contraction—

- (a) By the decrease of the population before the economical point has been attained.
- (b) By the increase of the population beyond the equivalent of the economical point.

In a state of slavery the subjective limitations on demand would be simplified. The enslaved units of intelligence engaged upon production would not be allowed to share in the potential non-staples or to be indolent; their numbers would tend to increase up to the economical point, and the surplus staples would be absorbed in the production of non-staples for the capitalists. In a free country, however, the owners of faculties appropriate, by methods which we shall presently investigate, a share in the potential improvements in the conditions of existence.

Dealing with free units of intelligence, we noted in our first book (page 69) that the habits of existing communities vary greatly, as also have varied the habits of the same community at different periods. In existing communities subjective causes induce variations in the quantity and kind of staples which are deemed necessary to existence. Such staples, for example, are greater in quantity and more costly in

kind in England, North America, and Australia, than in the European Continent and in Ireland, which in turn greatly exceed in these respects the staples necessary for existence in Eastern countries. And in addition to such staples, subjective causes in free communities also require that the workers shall have quantities, varying in each community, of non-staples or semi-luxuries (see First Book, page 94) as a condition of making good depreciation, i.e., propagating.

The effective demand for staples, under the conditions we are considering, will thus vary in each community, but, from year to year in the same community, it will vary within slight deviations *pari passu* with the number of individuals in the community. This point was discussed at length in our first book (page 69); whether the workers be idle, propagating, or producing non-staples for the wealthy, the consumption of staples *per caput* varies little from year to year.

The effective demand for non-staples in any self-contained community cannot exceed the quantity producible by the number of workers maintainable out of its total surplus production of staples. Intelligence (i.e., faculties) is the limited element in production of staples and non-staples alike. Out of the surplus production of staples, the staples for the producers of non-staples must be provided in exchange for such non-staples. To maintain the community the producers of non-staples must at least be offered sufficient staples in exchange for their products to provide for their existence and depreciation; therefore the effective demand for non-staples in a self-contained community cannot ultimately exceed the quantity producible by the number of producers, equal to the

quotient of the total surplus production of staples, divided by the quantity necessary for the existence and depreciation of a unit of intelligence. This constitutes the ultimate limit which in actual mundane conditions is, as stated below, never reached.

Ceteris paribus, the effective demand for non-staples will therefore in such a community rise and fall with any increase and diminution in the surplus ratio (see page 46), and will be greatest at the economical point (see page 73 *et seq.*).

The total possible effective demand for non-staples is reduced by the following subjective causes:—

1. By the application of part of the surplus production of staples to the increase of the population. In one view this may not be considered a subtraction from the consumption of non-staples, inasmuch as the gratification of the sexual impulse, beyond that necessary for depreciation, is economically akin to the gratification of the secondary impulses by the direct consumption of non-staples and faculties. When the economical point was passed, the gratification of the sexual impulse, beyond that necessary to make good depreciation, would in an increasing degree continually trench upon the effective demand for non-staples. But, up to the economical point, the increase of population may be regarded as the amalgamation of capital to produce other needed forms of capital, i.e., faculties. This is only a repetition in another form of the fact noted at the commencement of the inquiry in our first book (page 12), that the excess of production beyond what is

necessary for the existence and depreciation of the worker may be applied, as with bees, to the increase of the species. The quantity of staples so applied will of necessity *pro tanto* reduce the potential effective demand for non-staples, but, up to the economical point, this temporary reduction will be followed by an ultimate increase. As regards the community, it is analogous to the investment in a remunerative form of capital of part of a man's income; by such investment the capitalist curtails the immediate gratification of secondary impulses, but increases his future income, so that in the future, without trenching on his wealth, he will be able to expend in such gratification more than his immediate income, including the portion so invested.

2. By the preference of workers for indolence over luxury. In our first book (page 89) it was pointed out that, after the primary impulses are gratified, mankind are 'impelled towards ease and luxury, not necessarily towards indolence solely, or towards indulgence solely, but, according to individual tastes, perhaps to an equal enjoyment of ease and luxury, perhaps to the sacrifice of ease to luxury, or of luxury to ease.' It is not necessary to repeat here the whole of what we there stated under this head, for, as there explained, the subject travels beyond the ground of Natural and of Cosmopolitan Economy into that of Communital Economy, the third of the divisions marked out in the introductory chapter of our first book.

Inasmuch as staples are either vegetable products or dependent with one or two removes thereon (see First Book, page 68), it follows that, *ceteris paribus*, the surplus ratio, and in consequence the effective demand for non-staples, would be greatest where the soils are most fertile. Within the same community the soils of different districts vary greatly in relative fertility, and in the early periods of the agricultural stage of civilisation the economical point, to which all districts would naturally tend, would necessarily be at a higher degree of density of population in the fertile than in the barren districts. When implements of agriculture and non-staples began to be produced, the advantages of certain districts in relation thereto would tend to densify the population in such districts to a greater degree than in the fertile places, in the manner shown in our first book (page 76, *et seq.*), but the concentric zones of intensity, as there suggested for the purpose of illustration, would be disturbed by the greater facilities of transport in various directions, as along the lines of navigable rivers, of main roads, &c. While access between districts is difficult, the community, although one politically, is not so economically, and thus in the past in this country the effective demand for non-staples varied greatly in different districts. It still varies considerably, mainly owing to the conservative habits and customs and want of enterprise of the agricultural labourers, but the wonderfully increased facilities and decreased cost of transport tend rapidly to obliterate such differences, and to weld the community into one economical whole, or in other words, the conditions under which the capitalists owning only natural average faculties are willing to propagate, tends to identity throughout the community.

The foregoing indicates the relations of supply and demand in a self-contained community, i.e., one in which all exchanges are effected among the members of the community. But such communities do not exist among civilised races, and exchanges operate on a large scale between different communities. And, as certain districts in a self-contained community possess advantages over other districts in the evolution of agricultural implements and non-staples, so certain communities possess advantages over other communities in the evolution of the like products. The effective demand for non-staples in such a community is therefore not limited, as in a self-contained community, to (see page 149) 'the quantity producible by the number of workers maintainable out of the total surplus production of staples,' but, subject to other disturbing influences hereafter mentioned, to the quantity producible by the number of workers maintainable out of (1) its total surplus production of staples *plus* (2) the staples obtainable from other communities in exchange for its aids to production and non-staples, *minus* (3) the staples consumed by the producers of the aids to production and non-staples so exchanged. And *e contrario* a community, which obtained aids to production and non-staples in exchange for staples, would have its effective demand for non-staples produced within the community limited, to that corresponding to its surplus production of staples *minus* the quantum of staples so exchanged.

If all races of the human species were alike and intercourse and exchange were unfettered, it is evident that the tendency to identity of conditions, under which owners only of faculties would propagate, would operate as regards the whole world; but at this point, apart

from the greater difficulties and cost of transport, the tendency is retarded by a host of differences—climate, nationality, language, religion, &c. Restricted intercourse, however, affecting supply and demand, exists, and thus the effective demand for the implements and non-staples produced in this country, for example, is increased by that arising from the producers of staples and other non-staples in other countries.

Apart from the retarding influences just noted, there are two great artificial causes which tend to prevent the natural action of effective demand between communities for their respective products. These are:—

1. The imposition of protective duties upon imports and the payment of bounties upon exports.
2. The existence of legal rights, involving debts due from one community to another; whether such debts be due from one government to another, from the government of one community to the individuals of another, or from the individuals of one community to the individuals of another, their existence involves the export of products to liquidate such debts and in consequence without the benefit of any products in exchange.

At this point we only note these various retarding influences, which will call subsequently for further investigation.

The foregoing objective and subjective causes mark the limitations on the effective demand for non-staples in gross, but do not throw light on the influences affecting the effective demand for each particular kind of non-staple. Nor can such demand be brought under law; it is as various and varying as human whims and fashions can make it. The controlling

impulse is one for luxurious ease, but the particular non-staples required for luxury vary with different tastes. The general character of such non-staples is however greatly affected by the method of distribution of the potential surplus products. In a community in which large quantities of surplus products accrue to the few, and only small portions to the many, the non-staples in demand will be very different in kind from those demanded in a community in which surplus products are more equally divided. To take an extreme example, let us suppose a large surplus ratio to exist in a community, composed mainly of a few large slaveholders maintaining and working large numbers of slaves. In such case the whole surplus products would belong to the slaveholders, and they would doubtless vie in luxury each with the others. The effective demand would be for the finest buildings, furniture, decorations, gardens, horses, ornaments and works of art, and the best artists in every walk of life would be encouraged and maintained out of the surplus products—the luxury would be intense. Now let us suppose slavery abolished and the same potential surplus products distributed fairly equally among the working community. Some of an indolent nature would doubtless prefer ease to luxury, and forestall their share of the possible surplus products by abstaining from work. The industrious would work as before, and would seek to introduce simple luxuries into their homes, but the effective demand for non-staples would be diffuse not intense; there would be no demand for works of concentrated art, but, in lieu thereof, for such more hasty productions of every sort as were a fair equivalent for what could be spared from the small sub-divided shares in the total surplus products. By the aid of

these two extreme examples can be seen the general direction of the effective demand for non-staples, according as wealth is concentrated or distributed. This leads us up to the causes influencing the distribution of surplus products, and involves the phenomena of exchange and value, which are the central problems of human economics, and these we will now consider.

CHAPTER V

EXCHANGE

To save cumbersome circumlocutions we shall find it necessary as we proceed to attribute special meanings to some terms ; two of these we must introduce at this point.

INVESTOR is he who acquires the legal estate in any form of capital by an exchange.

DEVESTOR is he who parts with the legal estate in any form of capital by an exchange.

In relation to every exchange therefore, each party thereto is both an investor and a devestor—an investor in what he receives and a devestor of what he relinquishes. *Invest* and *devest* will be used as verbs, and *investment* and *devestment* as abstract nouns, with corresponding meanings. Under the institutions which are the main subject of inquiry in this book, private property and exchange, it must be borne in mind that the ultimate motive of all exchanges is to acquire the means, direct or indirect, of gratifying the impulses (see First Book, Chapter VIII). The productive-amalgamator, who acquires the blast furnace to which we have referred, enters upon all the exchanges and conducts all the necessary amalgamations, not because he personally wants pig iron, which will neither feed, clothe nor shelter him, nor gratify any luxurious impulse, but because he hopes to exchange the pig iron for more

money or debts than he has divested in his series of exchanges and amalgamations ending in its production, and the excess of what he thus receives over what he has divested will be used by him in gratifying his impulses. Such excess is, however, not itself the direct means; neither money nor debts will feed, clothe, or shelter him, and he has to make fresh exchanges before he obtains what he requires for direct consumption. The like motive actuates those with whom he exchanges; the man with the technical knowledge of the construction of blast furnaces exchanges the temporary use of his faculties for money or debts, wherewith he acquires the means of gratifying his impulses; the vendors of the bricks, lime, sand, ironwork, boilers, pipes, blast engines, &c., are all productive-amalgamators who have transmuted, by exchanges and amalgamations, their money or debts into the objects named, and who, at that point, complete their series by re-exchanging their products for money or debts: the skilled artisans and labourers divest the temporary use of their faculties for money or debts, also in order to acquire the means to gratify their impulses. The exchanges involved in the actual production and sale of the pig iron (see the Cost Sheet, page 119) are all similarly motivated. Rates and taxes represent in great measure, as before stated, the productive-amalgamator's contribution towards the cost of national and municipal services, and those services are also rendered in exchange for money or debts, so that those who render them may acquire the wherewithal to gratify their impulses.

Exchanges, in relation to the immediate purposes for which they are made, are of four kinds, viz:

1. *Investments for direct consumption by the investor.*

This kind can take place only when the investment is a complete product or an immaterial service. None of the exchanges described in the second chapter as resulting in the production of pig iron falls into this class, as neither the materials or faculties on the one hand, nor the money or debts exchanged for them on the other, were acquired for direct consumption. If we traced out what the artisans and labourers did with the money they received, we should come upon exchanges of this kind. They would devote it for food, clothing, and lodging for themselves and families; the food and clothing they would consume immediately; the lodging also, consisting of a house and furniture, would be partly consumed by wear and tear as they were using it. They would also acquire by exchange such non-staples as their means would allow. The large class of domestic and body servants in this country, unlike artisans and manufacturing labourers, generally exchange their faculties, partly for complete products and partly for money; the like method is common also with farm labourers. A productive-amalgamator, such as the producer of pig iron, whom we may presume to live luxuriously, and other possessors of large wealth, would acquire, as products for direct consumption, only the food, clothing, lodging, and sundry luxurious non-staples for themselves and families. They would not acquire for direct consumption the whole of the complete products consumed in and about their

houses. Such of these as were consumed by the servants would be acquired to re-exchange for the faculties of such servants, and it is *the faculties of the servants* which the wealthy man would consume: this is an obvious distinction which it is important to keep in view.

2. *Investments for re-exchange by the investor without amalgamation.* This category includes many of the transactions of the large class of merchants and other middlemen, as they are called, in both complete and incomplete products; capitalists of this class, having special knowledge of the markets where certain products can be best acquired and where they can be most favourably re-exchanged, seek to utilise that knowledge by investing in such products for a smaller amount of money or debts than that for which they can divest thereof, and to 'live on' the difference. They are met with at every turn of production; for example, the bricks, lime, sand, ironwork, boilers, pipes, blast engines, coal, ironstone, limestone, &c., referred to in our analysis of the cost of pig iron, might not have been obtained from productive-amalgamators but from middlemen, who might have bought them from other middlemen, and so by several removes from the productive-amalgamators who produced them. Similarly the pig iron when made, instead of passing directly to another productive-amalgamator to be carried another stage towards a complete product, might be sold to a merchant and pass through several similar exchanges before it was further

'amalgamated.' Some closet philosophers have represented the whole class of middlemen as useless parasites on our economical system, and seem to think that they could order things better by bringing producers and consumers directly together. They should remember that productive-amalgamators are as likely to be as well informed in their methods of production as philosophers in their philosophy; more likely, in fact, because a productive-amalgamator has continually to 'back his opinion,' and, if he do not select the best methods of production, he loses his capital. Amid our widely-extended markets and far-reaching divisions of labour the middleman is a cheapening element in production. Every complete and incomplete product requires a study as special almost as a learned profession. The conditions are changing from day to day; new sources of supply are so frequently opened up, new methods so unceasingly introduced, that it would be impossible for one man—the pig-iron producer, for example—to acquire the necessary knowledge for each and all of the related products involved in his branch of production. It is the business of middlemen to acquire such special knowledge, and, by competition among them, the pig-iron producer is offered the various products he requires from the most favourable sources of supply; while, on the other hand, the iron merchants are always on the watch to open up new markets for pig iron. The middleman's business is, in fact, almost an essential part of intense production.

The acquisition of money and debts falls within this class of exchanges, as they are acquired, in exchange for other forms of capital, only to be re-exchanged. There are special phenomena connected with the investment and divestment of money, which will be dealt with subsequently. The result of the adoption of a medium of exchange is that money or debts is one of the forms of capital exchanged in almost every transaction.

The dividing line between this and the next class of exchanges is not always well marked; sometimes the iron merchant, for example, acquires the pig iron at the place where he re-exchanges it; at other times, he acquires it at the site of production, and amalgamates with it the capital consumed in transporting it to where it is required by the purchaser from him. In the latter case the iron merchant is a productive-amalgamator, and the exchange falls under the next class.

3. *Investments for amalgamation with other capital, followed by exchange of the resulting product.*—This class includes all the processes of evolving complete and incomplete products, which are carried on where intensity of production obtains. We have already traced the working of this class in relation to the production of pig iron, which is typical of all processes of intense production, and it is not therefore necessary to further explain it.
4. *Investments for amalgamation with other capital, followed by consumption by the investor of the resulting complete product.*—This does not

extensively prevail where intensity of production obtains, but it is common in some sparsely populated districts difficult of access, where houses are built and clothing and food mainly produced by the direct consumers. In relation to economic science exchanges falling under this class scarcely need to be distinguished from the first category.

We will use the word *factor* in its commercial sense to mean a man who acquires capital for re-exchange without amalgamation. It is not possible, however, to draw a sharp logical line between a factor and a productive-amalgamator; a metal merchant, for example, may pass on by exchange copper or tin to another capitalist, at the same spot and in the exact form in which he receives it; but his own faculties and those of his clerks have been consumed or amalgamated in the investment and subsequent divestment. This slight inaccuracy in our definition is however unimportant, and may be disregarded.

It is important to note that, under ordinary conditions, money or debts can be invested in any and every other form of capital. This results from their attributes as the medium of exchange. Money was until recently the only medium, but, under our banking system, debts, which are always expressed in terms of money, are a much commoner medium than actual money. By debts we mean only such as fall within Class 8 of capital (see page 112), legal rights *in esse*, i.e., enforceable on demand, not debts payable after notice, or at a future date, or for some reason not immediately recoverable; these fall under Class 9 of capital, and have not to the full extent the power of investment inherent in money and debts.

The acquisition of money or debts is, as shown above, the last stage but one in working out, under the institutions of private property and exchange, the ultimate object of all factors, productive-amalgamators, and of the vast majority of those who hire out their faculties. Nearly every one except domestic and farm servants has to divest his other capital for money or debts, as a preliminary to acquiring the means of gratifying, so far as practicable, his impulses. In consequence the owner of money or debts, under all ordinary conditions, to the extent of their exchangeable equivalents which will be subsequently considered, can acquire all forms of capital including all products complete and incomplete, and the use of all classes of faculties.

On the other hand, the owner of a blast furnace, or of any form of complete or incomplete products other than money or debts, has not under ordinary conditions an equal facility of investment. It frequently happens that the supply of such products outruns the demand based on the possible consumption of the several complete products (see page 146), and such complete products and all the related incomplete products become more or less difficult to exchange. There are degrees, if we may so express it, of inexchangeability: a product that would not decay, such as wheat, would, under the supposed conditions, probably be exchangeable, but for less money or debts than it had cost to acquire. Perishable products, or products such as a blast furnace subject to decay and obsolescence, are often under such conditions absolutely inexchangeable.

There are extraordinary conditions under which money and debts lose this property of flexibility of investment. In a besieged town, for example, the

owner of the last loaf of bread, on the direct consumption of which his life depended, would probably not part with it for any amount of money or debts. Such events are not of sufficient frequency to affect our conclusions, but their consideration is often useful, by reason of the light they throw on the final motives operating in human economics.

Inasmuch as the acquisition of money or debts is, under the institutions of private property and exchange, the penultimate object of every capitalist in making the various exchanges involved in production, it follows that all earnings of capital tend to reduction to that form. Productive-amalgamators and factors alike start with money or debts on their respective series of amalgamations, in the hope of getting back, when the series is finished, a larger amount of money or debts: if their aim be attained, they can then apply part of the increase in acquiring for direct consumption products and faculties necessary to the gratification of their impulses, and the other part is available to start, like the original capital, on a fresh series of exchanges. It is at that point, when the 'profit' has assumed the form of money or debts, that the capitalist has the choice of intensifying his luxuries, or of increasing his productive investments with the view to greater command of luxuries in the future. Now if a community be increasing in numbers without deteriorating the conditions of existence, or be improving the conditions of existence (otherwise than by idling) without decreasing in numbers, it is obvious that, under the institutions we are investigating, fresh supplies of money or debts must be continually invested in all the forms of capital necessary to the evolution of the various complete products directly consumed by the community. The effective

demand, and consequently the supply, of either staples or non-staples or of both would, under the conditions named, increase; also some portion of that kind of incomplete products usually classified as plant and implements would be dissolved by wear and tear and decay. Fresh amalgamations, to meet such increased demand and to make good the wear and tear and decay, must be made, and can only be undertaken by capitalists possessing money or debts, as those are the forms of capital requisite to hire the necessary faculties, and to acquire the other necessary incomplete products entering into the required plant and implements.

We are thus led up to an important proposition which must be examined carefully, as it constitutes the groundwork of the reasoning in the following two chapters.

(The reasoning at this point becomes complicated, and it is advisable that the reader should know clearly the direction and extent of each step in the argument: we shall therefore enunciate and mark by italics each proposition claimed to be established in the rest of this and in the succeeding two chapters, and for the purpose of ready reference we will number them consecutively.)

PROP. 1. *The divestments of money or debts by factors and productive-amalgamators tends to bring about equivalent gains on all such divestments, proportionate to quantity divested and to time elapsing between the original divestment and the ultimate re-exchange of the product into money or debts.*

This conclusion flows from the conditions we have just investigated. The capitalist owning money or debts is free to choose any investment. Factors and productive-amalgamators include all the capitalists, at

whose risk are made the various amalgamations incidental to the evolution and distribution of products. The capitalist owning money or debts may elect to become a factor or a productive-amalgamator in any of the numerous divisions incident to intensity of production, and, as he will seek to gratify his impulses by a minimum of effort, he will base his selection on his judgment as to which, by the ultimate re-exchange, will give him the greatest increment. But this increment will have relation to time also. If, by acting as a middleman in some branch of trade, he can in six months re-exchange £100 into £105, and if, as a middleman in some other branch or as a productive-amalgamator of some kind, he can in twelve months re-exchange £100 into £108, he will select the former. His own impulses require for their gratification quantities of products proportionate to time of existence, and he must calculate his gains on the same basis. The gains on all such investments concerned with production and distribution will thus tend to proportionate equality in the terms of this proposition. This equality is, however, for reasons previously stated, continually disturbed by oscillations in connexion with each product, on either side of proportionate equality. The various productive-amalgamators leading up to a complete product have generally no means of foretelling either demand or supply. Perhaps none of them has relations with the direct consumers; they can only produce blindly as long as they can re-exchange their products for more debts or money than they have parted with to acquire them. When they cannot they will probably cease to produce. We say probably, because sometimes production must continue even at a loss, in order to prevent a greater

loss. A productive-amalgamator, for example, may have sunk £30,000 in a colliery; then, from general over-production of coal, he may not be able to produce his coal for so small a sum as that for which he can re-exchange it. Now the closing of his colliery will probably mean the loss of the whole of his £30,000 at once and for ever; he cannot, he will argue, ultimately lose more than this, and he will therefore in preference continue to produce at a loss, in the hope that, before everything is lost, demand may once again overtake supply and enable him to re-exchange at a profit. All these varying circumstances are inquired into by capitalists possessing money or debts, and they will not enter on amalgamations likely to result in loss, but will choose those amalgamations in which the product can, for the time being, be re-exchanged at the highest gain. Similar over-production will then result in those amalgamations and, in the end, the general gain on all will tend to be proportionate.

The gain on the divestment of money or debts must be distinguished from other allied phenomena. We have already spoken of the special knowledge required by a factor or middleman. Similarly, special knowledge is required, to an equal or greater degree, by productive-amalgamators. But the extent of this special knowledge, and the difficulty (i.e., the consumption of intelligence) in acquiring it, varies in different productive processes. Some require many years of training, so that a productive-amalgamator is, in such cases, also a technic-amalgamator. His gain on the re-exchange of his products will therefore include also his remuneration for the necessary acquired superiorities of faculties (Class 6 of capital), and will for that reason apparently be at a higher rate than

the gains in other processes, where so much acquired skill is not required. We shall see later the basis on which such remuneration as a technic-amalgamator is determined. Again, the different processes of production have different degrees of risk. An investor in a colliery, as we have mentioned, may lose everything in a time of bad trade; an investor in a gasworks may get a reduced return in a time of bad trade, but does not run such risk of loss of capital as the colliery owner. If a colliery and a gasworks, both showing the same rate of return on the amount to be devested, were offered to a capitalist owning money or debts, he would unquestionably choose the gasworks; he would probably choose it at half the rate of profit shown on the colliery. The extra return expected on the colliery is an insurance fund against destruction of capital; its amount is based on the experience of productive-amalgamators, and it must be eliminated from the gains referred to in this proposition.

Another point to be noted is that the phrase 'equivalent gains proportionate to quantity' (of money or debts) 'dvested,' in the terms of this proposition, does not mean the quantity which actually has been devested, but which would have to be devested at the time the equality is working itself out. Thus, if a productive-amalgamator lay down an extensive plant at a time of inflated prices, and afterwards prices fall, so that half the amount of money or debts would suffice to erect a similar plant, the gain will, so long as the low prices continue, tend to a proportionate equivalent based on half what the plant actually cost, for that is the only figure which a capitalist, owning money or debts, has to consider when determining what investment he will enter upon. If prices rose after the

erection of the plant, a similar principle *mutatis mutandis*, would obtain.

This proposition is equally true for a community travelling beyond the economical point, i.e., one in which the numbers are decreasing without improvement in the conditions of existence, or in which the numbers are increasing or stationary and the conditions of existence are deteriorating. The irresistible forces of decay, joined to wear and tear, would still call for fresh devestments of money or debts in the plant and implements necessary to the production of staples, and of the contracting quantum of non-staples. The productive-amalgamators concerned with the production of such non-staples, as the impoverishing habits of the community compelled them gradually to forgo, would reduce in numbers *pari passu* with the tendency of the supply of such non-staples to exceed the effective demand.

Before proceeding to the conclusions which flow from the foregoing proposition, we wish to consider shortly the causes which stimulate exchange into action, and for that purpose to investigate the mutual relations of Owner's Valuation, Buyer's Valuation, and Market Valuation, which we have already defined (see page 105), and also their bearing upon what economists call natural or normal value, which in our terminology becomes Normal Valuation.

Four immediate purposes of an investor in acquiring capital by exchange have been noted (see page 159 *et seq.*); these may be rearranged under two heads—

1. For direct consumption, with or without further amalgamations.
2. For re-exchange, with or without further amalgamations.

PROP. 2. *A divestment of capital only and always results when the market valuation exceeds the owner's valuation.*

This statement is practically an axiom, as it flows from the terms of the definitions (see page 105). Owner's valuation is what tends to keep capital in a state of rest; it is the *vis inertia*, which can only be moved by a force greater than itself. The market valuation means, by the terms of the definition, the highest buyer's valuation, in the market with which the owner is in relation. A wider market might lead to higher offers, but what the owner does not know is for him non-existent. Strictly the terms, 'owner's valuation' and 'market valuation,' are reciprocally applicable to both forms of capital which enter into an exchange. If 100 quarters of wheat are exchanged for £150 (in money or debts), the market valuation of the wheat is £150 and the market valuation of £150 is 100 quarters of wheat. But, as the acquisition of money or debts is, under existing systems of commerce, the penultimate object of all exchanges concerned with production, market valuation is generally understood as the highest price (see page 105) offered for capital other than money or debts. Price thus becomes the common denominator, by which the relative valuations of all other forms of capital are compared. Some special phenomena affecting the valuations of money will be investigated subsequently; the following propositions, however, apply equally to money as to other forms of capital.

COR. *That in order that an exchange may result, either the owner's valuation must diminish or the market valuation must increase.*

PROP. 3. *If an owner has acquired capital for direct consumption, i.e., to gratify an impulse, he will only devest it to gratify some more powerful impulse.*

It follows from this that it is hardly possible a man would devest what was absolutely necessary to his existence, such as the last loaf of bread in a siege, or the last cup of water among a shipwrecked crew. (Our terms of course refer only to devestment by exchange, and we have not to take account of love and compassion, which in some individuals have proved stronger than the impulse for prolongation of life.) Our supposed collector of antiquities (see page 104), to further illustrate this proposition, has, we will assume, exchanged the whole of his other capital in riding his hobby, so that, except his antiquities, he has nothing to give in exchange for ordinary staples. His antiquities were acquired for direct consumption, but, at this point, a struggle between his impulses would arise, and one by one his antiquities would be sacrificed to prolong his life. Numerous instances occur of the diversion of complete products from the purpose for which acquired, as indicated in this proposition, but in the vast majority of exchanges, motived by the purpose of acquisition for direct consumption, the purpose is fulfilled.

PROP. 4. *The owner's valuation of capital acquired for re-exchange (with or without further amalgamations) will tend to diminish in consequence of (1) his apprehension that the market valuation will fall, or (2) his pressing urgency for some other form of capital.*

The market valuation of all products is never stable for a lengthened period; intending investors are for

ever trying to force the market valuation down; intending devestors are for ever trying to force it up. And with regard to the class whom we have called factors, the same man who is an investor one moment, may be a devestor the next. The demand for all kinds of products is, as we have seen, limited ultimately by the demand for direct consumption (see page 145 *et seq.*). But the extent of that demand is, as we have stated, generally not ascertainable, nor is the extent of the supply. The supply of staples in fact is mainly dependent on vegetable products (First Book, page 68), which necessarily involves uncertainty as to its extent. The demand for direct consumption of non-staples also depends ultimately on the same uncertain supply (First Book, page 73). If, from short harvests over a series of years, the supply of staples fall short, the market valuation of staples, *ceteris paribus*, must tend to rise, and of non-staples must tend to fall: good harvests will cause an opposite tendency. Thus anyone acquiring capital for re-exchange finds himself at the outset embarked upon a sea of speculation, and every form of complete and incomplete products may be subject to special influences, co-acting with or counteracting the dominating influences indicated above. The effects of a bad harvest may be increased by simultaneous diminution in the cultivated acreage, or may be counteracted by the opening of new sources of supply. An increased demand for non-staples may be concurrent with improved methods of production in respect of some of them; on the other hand, the convenient sources of supply of the natural objects, which are the basis of some non-staples, may be on the point of exhaustion. Intending investors in and devestors of every kind of

products have to take all these and the like general and special influences into account, and then to determine whether, at the market valuation for the moment of each product, it is advisable for them to invest or divest such products, in the hope and intention to make a corresponding divestment at a higher valuation or investment at a lower valuation. If the prevailing opinion be towards investment, the market valuation will rise; if towards divestment, it will fall. The market valuation of any product does not therefore reflect the valuation of the ultimate consumers; it reflects instead the anticipations of those who have studied the influences affecting the particular product, of what the future relations of demand and supply, in respect of such product, are likely to be. The owner of products acquired for re-exchange (with or without further amalgamations) is himself an element of the market, and determines his action by weighing the influences around him. If he apprehend that the market valuation of the products which he seeks to divest is likely to fall, he will endeavour to complete an exchange before the fall has taken place, even though such exchange should not recoup the money or debts he has parted with to acquire the products: his present loss in such case will be less than the loss involved by retaining the products. Calm judgment is necessary to distinguish real from apparent influences, genuine excess of demand or supply from artificial 'bulling or bearing.' Sometimes an intending divestor is obliged to divest at the market valuation whatever it be; if his products, for example, be what are called perishable, their retention must reduce their market valuation, irrespective of the tendency of the market as regards fresh products. The foregoing are only a

few of the complicated influences affecting the markets; the owner may read them rightly or wrongly, but his anxiety to effect an exchange will increase or diminish as he judges, whether rightly or wrongly, that the market valuation is likely to fall or rise.

The owner's valuation of any product acquired for re-exchange is likely to diminish, if he has pressing urgency for some other forms of capital. The owner of pig iron, for example, though he may anticipate a rise in the market valuation of pig iron, may have urgent need for money or debts to meet his liabilities, or to pay wages and purchase materials, so as to continue the working of his furnaces. In these circumstances he will be compelled to devalue at the market valuation. This is the position of the great majority of productive-amalgamators and of factors; their scale of operations is based on the anticipation that they will be able to re-exchange their products into money or debts within a short interval after acquiring them, and that the money or debts so obtained will provide the means for fresh amalgamations and investments. Liabilities are incurred on this basis, and thus the whole must be kept flowing like a stream; continuous sales of the products must be made, or the flow will be stopped at its source. This class of capitalists constitutes the weak holders, who are so heartily hated by their stronger competitors in the same class of products; their number, exigencies and the extent of their operations are important elements for consideration in forecasting the movements of market valuations.

PROP. 5. *The market valuation of a particular form of capital will increase through (1) the apprehension of intending investors that the market*

valuation will rise, or (2) the pressing urgency of intending investors for the particular form of capital.

The first part of this proposition is practically a corollary to the one preceding. The second part is frequently illustrated in business life. In the year 1904, for example, there was a great failure in the hop harvest in this country. Hops, in the ordinary way, represent only a small proportion of the cost of beer, but they are essential to its production. Under these circumstances the brewers of the country had the most pressing urgency for hops; without them they would have been compelled to cease brewing, allow their large plants to be idle, and lose the valuable goodwills of their businesses. This urgency of demand forced upwards the market valuation, and in a few months the price of hops increased fourfold. The great increase in the market valuation of coal and iron in 1870 and 1871, and again in 1899, 1900, and 1906, was due to similar causes.

PROP. 6. *Intending investors in products for direct consumption can only acquire them at the current market valuation.*

Although direct consumers ultimately determine the actual demand for all products, they have little ~~or~~ no effect on the immediate market valuations, which are based on forecasts as indicated above. To gratify their impulses they have no option but to pay the market prices so fixed.

CHAPTER VI

VALUATIONS

WE have now to investigate : (1) The relative valuations of different forms of capital, (2) the proportion borne by the valuation of any form of capital to its hire-valuation, and (3) what determines that proportion. These questions are so intermixed that we shall not attempt their separate investigation, but shall seek to establish propositions bearing upon all of them.

With reference to the classification of capital given on page 112, we have already noted that Classes 5, 6, and 7 (human faculties) differ from the other forms in that, under existing civilised laws, those forms of capital cannot be absolutely transferred ; they can only be temporarily transferred. They have no valuation, because their absolute transfer is not allowed ; they are susceptible only of hire-valuation. To maintain this distinction through all the steps of the somewhat complicated reasoning before us would needlessly add to our difficulties. We therefore intend in the first instance to trace out our conclusions, on an hypothesis that faculties can be absolutely transferred, i.e., that slavery is permissible. We will then see how the abolition of slavery affects those conclusions. This will accord with the historical development of economics, as slavery was formerly permitted as generally as it is now prohibited.

All our conclusions then in this chapter will be based on the assumption, that the beings in whom intelligence is inherent can be bought and sold by any productive-amalgamator or other capitalist, the same as horses can be bought and sold, and that, when the faculties of such beings are applied to production, the whole products therefrom, after provision only for the existence of the slaves, belong to the capitalists at whose risk the amalgamations are made, i.e., the productive-amalgamators. This hypothesis does not exclude, and is not meant to exclude, the existence, side by side with the slaves, of freemen possessing only their own faculties, and hiring them out as labourers do now. By viewing the two side by side we hope to distinguish between what a labourer receives for his own existence and depreciation, which is the first charge on gross products, and what he receives as a capitalist, owning himself, out of the surplus products *pari passu* with capitalists owning other forms of capital.

Our first numbered proposition in the last chapter establishes the conclusion that the gains, resulting from embarking money or debts on any series of exchanges connected with the various branches of production and distribution, will tend to vary only in proportion to the amount invested and the time over which the series extends: our next proposition in the investigation of the phenomena of valuations is:

PROP. 7. *The gains resulting from embarking money or debts on the series of exchanges of factors and productive-amalgamators constitute the hire-valuation of the capital so embarked.*

This becomes sufficiently obvious if we reflect that

the money is often found by one man, and the exchanges are entered upon by another; in that case a specific rate is paid by the productive-amalgamator or factor for the use of such capital. But the 'gains' must be eliminated from all the allied phenomena mentioned in connexion with Prop. 1. The owner of the money or debts may take the risk of a partner, in which case he will require higher gains as an insurance against such risks. Or, without taking a partner's risks, the productive-amalgamator or factor may not be a man of means, and the owner of the money or debts will feel that only if the ventures succeed can he be sure of receiving back in full his capital. In that case he will require a higher rate than if the borrower can give him substantial security, to guard him against loss in any event. Everything beyond the rate required under the last named condition is in the nature of insurance. Further, what the productive-amalgamator or factor receives from his series of exchanges in excess of such rate is partly for insurance and partly the hire-valuation of his inherent capital, acquired superiorities of faculties, affording him exact and special knowledge of the particular branch of production or distribution.

~~PROP.~~ 8. *The valuations of the several forms of capital tend to have the same ratio to each other as their several hire-valuations over the same period of time.*

This proposition does not enter upon the question whether valuation is determined by hire-valuation, or *vice versâ*, but only that the amount asked or offered, for the temporary use for a given period of each of different forms of capital, will tend to bear a common

ratio to the amount asked or offered for the absolute transfer of each of such different forms of capital. If the hire-valuation of a particular form of capital bore a higher ratio to its valuation than other forms, the owners of money or debts would acquire that particular form of capital to hire it out. On the other hand, if the ratio were lower, the money or debts of capitalists would flow to other forms of capital, to the exclusion of the exceptional one, until the ratio was equalised.

PROP. 9. *At the same time and place there is only one market valuation or hire-valuation for the whole quantity of each kind of multipliable products offered by intending devestors.*

Intending investors will not concern themselves whether one intending devestor has had to disburse more than another to acquire the same kind of product. They will raise or lower their offers only according to the tone of the market, and without regard to the possible result, that the same valuation may give a profit to one devestor and cause a loss to another.

PROP. 10. *The market valuation of each multipliable product tends to a level, which gives equivalent rates of hire-valuation on the capital of all productive-amalgamators and ~~of all~~ factors invested in every kind of multipliable-production.*

This follows from Prop. 1, and by our hypothesis we include slaves (natural average faculties) among multipliable products, as under conditions of slavery they are a product, calling for continuous fresh investments of money or debts, and their increase or diminution would be regulated, not by the force

of the sexual impulse, but exactly as the increase or diminution of cattle, horses, or any other multipliable product. While then temporarily the market valuations of multipliable products may vary from the numerous causes indicated in Props. 4 and 5, they only move above and below a level of stability; for, if the market valuation of a multipliable product give an excessive or an inadequate return to any of the productive-amalgamators or factors concerned in bringing such product to the buyer for direct consumption, the irregularity is corrected by the influences indicated in Prop. 1. The point noted in Prop. 1 (see page 169) must be recalled here; 'equivalent gains . . . proportionate to quantity divested' does not mean equivalent gains on the quantum of capital 'which actually has been divested, but which would have to be divested at the time the equality is working itself out.' Furthermore, the level of stability in respect of any kind of product is not constant, and any change therein affects more or less the level of stability of every other kind of multipliable product. In our first book (Chapters VI, VII, and VIII) we dealt with the many influences affecting the proportion of surplus to gross products, all of which it is evident tell on the market valuation of the affected product. Let us suppose a great improvement in the method of coal mining; this, *ceteris paribus*, would reduce the level of stability in the market valuation of coal; this again would lower the level of every product into which coal entered, including slaves in whose production coal, for artificial warmth and for culinary purposes, we may suppose necessary, and this again, as slaves are the depositaries of intelligence, would affect every product. Market valuations obey laws similar to

the laws which control the level of a large lake ; there is always a tendency to a level of stability, but local agitations will temporarily disturb the level ; if at any part a quantity of water be added or abstracted, the tendency to a common level will at once commence to operate, but the new level will be slightly higher or lower than that maintained prior to such addition or abstraction.

Such is the general law, but its applications to the various products are as diverse as the processes by which those products are evolved. If the supply of a product can be readily and speedily increased, the market valuation of that product cannot long remain above the level indicated in this proposition ; money and debts at once flow to the particular production, and there is a speedy reaction towards, and perhaps below, the level of stability. With coal on the other hand the corrective influences would work slowly. If an excessive demand for this product arise, the supply cannot be largely increased, except by the acquisition of incomplete products of a permanent and expensive character. Deep pits have to be sunk, involving often several years of unremunerative outlay, engines and winding and ventilating gear have to be erected, underground roads and airways constructed. Thus, if productive-amalgamators desire to increase the supply, they cannot at once do so. Further, before entering upon the outlay necessary to fresh winnings of coal, the productive-amalgamator has to be guided, not by the market valuation of the product at the time his outlay commences, but by what he judges the market valuation is likely to be at the time when he will be able, as the result of his outlay, to bring coals into the market. He will not, therefore, be tempted to fresh outlay,

unless he judge that the rise in the market valuation is likely to be maintained. On the other hand, if the stable rate of hire-valuation cannot be obtained on all the capital invested in the production of coal, the same scale of production may, nevertheless, continue for a long time, to prevent loss of the necessary incomplete products which represent the productive-amalgamator's capital (see page 168). Every form of complete and incomplete multipliable product has similarly its particular natural history, which will determine the speed or slowness with which the principle of this proposition applies itself thereto.

In testing this principle by the statistics of commerce, care must be taken not to confound (e.g.) the market valuation of a product, such as pine timber, freshly cut from the existing forests where it has grown, with its market valuation delivered say in this country. Its valuation in this country includes the return for all the other forms of capital amalgamated with it to bring it to this country, such as human faculties, barges, ships, coal, &c. The greater part of these amalgamated capitals may be of that class of which coal is taken above as the type, and pine timber in this country may be a product more nearly resembling the coal class than the class of products readily increased, of which itself is a type where it has grown.

It will be convenient to adopt terms to express hire-valuations and valuations at the levels of stability for the time being indicated in the foregoing proposition; we will therefore introduce the following into our verbal currency.

NORMAL HIRE-VALUATION is that common level of stability for the time being in the rate paid for the temporary use of capital above which,

when the market hire-valuation of any form of multipliable capital rises, the supply of that form of capital for hire tends to increase, and below which such supply tends to decrease.

NORMAL VALUATION is that measure of value of a multipliable product which pays normal hire-valuation on the capital employed and replaces the capital at the time necessary to be amalgamated and otherwise dissolved (see page 135 *et seq.*) in its evolution.

PROP. 11. *The normal valuation at a given time and place of a multipliable product is such as suffices to pay the normal hire-valuation on the capital employed and replace the capital amalgamated and the average capital otherwise dissolved in the evolution of the most costly portion of such product necessary to meet the effective demand for direct consumption of the several complete products into which it enters.*

This is in apparent contradiction to the preceding definition, but the next proposition will show how the two are reconciled. We have already seen that there is only one market valuation of each kind of multipliable product at the same time and place (Prop. 9). It is evident that, if such market valuation remained below what is necessary, after replacing capital amalgamated and dissolved in the production of the most costly portion required, to pay also normal hire-valuation on the capital employed, the further production of such most costly portion would cease, until the market valuation had risen to the necessary level (see Prop. 10). On the other hand, if, through short supply, the market valuation were more than the aggregate of such

capital *plus* such normal hire valuation, the evolution of still more costly portions of that product would be commenced, and the normal valuation would, *ceteris paribus*, be permanently increased, up to the point of supply once more equalling demand. The natural order of appropriation in respect of the several kinds of natural objects entering into production and the effect of intensity of production have been investigated in our first book (see First Book, Chapter VI).

We have used the phrase 'average capital otherwise dissolved' in this proposition to include all the losses incident to production indicated in Chapter III. Productive-amalgamators and factors cannot recoup such losses specifically out of the market valuation of the particular product, in respect of which the loss occurs (Prop. 9), and they therefore increase the owners' valuation of all similar products, as an insurance against such losses. As regards losses by decay, for example (see page 133), the particular fresh fish or fruit, which a buyer acquires for direct consumption, suffers no decay, but its normal valuation will include sufficient to recoup, by the price of all that is sold, not only the actual capital amalgamated in its production, *plus* such normal hire-valuation, but also the capital, *plus* normal hire-valuation, amalgamated in the production of such portion as may be left on the owner's hands to decay, and the loss of capital, *plus* normal hire-valuation, of such portion as, through incipient decay, he may be compelled to sell at prices insufficient to replace its share of capital amalgamated, *plus* hire-valuation on the capital employed.

Similarly the normal valuation is increased by the liability to the various forms of destruction (see page 135 *et seq.*); the general underlying principle is that the

products which escape destruction must pay for those expected to be destroyed in the course of production.

At this point then we may note three of the constituents of the normal valuation of a multipliable product.

1. Normal valuation of the capital actually amalgamated.
2. Normal valuation of the proportion of the capital expected to be otherwise dissolved in the processes of production.
3. Normal hire-valuation on the capital employed.

PROP. 12. *The advantage of any source of supply of a particular natural object or force, over the source of the most costly supply required to meet the effective demand for direct consumption of the several complete products into which such natural object or force enters, constitutes capital.*

The advantages referred to in this proposition fall under each of two of our divisions of capital (see page 112); they may be such as give value to moveable natural objects falling under Class 1, or they may be 'Advantages of Site' falling under Class 3. These advantages are very diverse in character. As regards such as impart value to moveable objects, those conditions which, in relation to replenishing and un-replenishing objects, determine their relative accessibility fall principally under this head. This point has already been fully examined and illustrated by the special phenomena in connexion with coal and vegetable products (First Book, page 55 *et seq.*). Undiminishing objects in their natural condition cannot by their nature be capital, for everyone can obtain all he requires from the same source. Although,

however, undiminishing objects as such cannot be capital in their natural condition, their relative proximity may be the cause of an advantage of site, constituting capital under Class 3. The water of a lake, for example, may be an undiminishing object useful for brewing. Two breweries, A and B let us suppose, draw their supply from it; A is situated where it obtains all required by natural gravitation, B satisfies its requirements only by continuous expenditure of capital in pumping, &c. The advantage of A brewery in this respect over B constitutes capital under Class 3.

The relative proximity of replenishing and un-replenishing objects is also an element in advantages of sites; B brewery, supposed to be at a disadvantage in relation to the supply of water, may have equal or greater advantages in relation to supplies of barley (based on replenishing objects) and coal (based on unreplenishing objects). If we suppose that both breweries draw their supplies of coal and barley from the same source, they will each have to give the same prices to the farmer and colliery proprietor (Prop. 9), but the expenditure of capital for transport necessary for B may be considerably less than that necessary for A. This advantage of site similarly constitutes capital for the B brewery. These relative advantages and disadvantages would have to be set off each against the other, in determining whether A or B had absolutely the advantage of site.

But none of these advantages is capital, except temporarily, if there remain ready for appropriation other sites with similar advantages. If the A brewery had secured the only spot where water could be obtained by natural gravitation, and that advantage

was found to outweigh the disadvantage in respect of barley and coal, then, so long as the demand was sufficient to keep both breweries continuously employed, i.e., to absorb the production of B brewery at normal valuation, the owner of A brewery would possess capital in the nature of advantage of site. If other sites with like advantages to that of A were available, it would only be a question of time for other breweries to be built on such sites, involving, in the ordinary course of commercial competition, the cessation of production at B, and the loss to the owner of A of the capital represented by the advantage over B.

PROP. 13. *Moveable natural objects, which have no advantages over the most costly portion required for the time being, and sites, which have no advantages over other unappropriated sites, are not capital.*

This follows as a corollary from the preceding proposition; manifestly, while the world is so sparsely populated that moveable natural objects of all kinds and sites in practically unlimited quantities remain unappropriated, buyers will only attribute a valuation to those having an advantage over the most accessible of such as are unappropriated.

NOTE.—In our first book we found that there are three elements of production, Natural Objects, Force, and Intelligence, and that three classes of Force are utilised in production, viz., Human Force, Cosmic Force, and Produced Force. The preceding two propositions apply equally to the force entering into a product, as to the natural objects which are the basis of the ultimate product. This is obvious as

regards produced force: cosmic force (such as a waterfall) becomes capital only as an advantage of site, and then only so far as it is limited and possesses advantages over other sources of force, called for by the effective demand for the complete products into which such forces can enter.

PROP. 14. *Subject only to legal rights in posse the normal valuation of all multipliable products is reducible to terms of Class 5 of capital (Natural Average Faculties) and normal hire-valuation thereon.*

By the terms of our definition of multipliable products (page 131) everything is excluded into the production of which Class 7 of capital (Innate Superiorities) or Class 10 (Alienable Reputations) enters. As previously stated (page 107), the inception of buyer's valuation, which is the essence of capital, is the instinct of the human race, in common with all forms of animal life, to gratify its impulses with a minimum of personal exertion, i.e., with a minimum expenditure of natural average faculties. We have seen (Prop. 11) that the normal valuation of a multipliable product is based on the capital necessary to be expended on its most costly required portion. Therefore the normal valuation will include nothing for moveable objects in natural condition, or for advantages of site (Prop. 13). This, as stated in the note to that proposition, applies not only to the natural objects, which form the basis of the finished product, but also to all amalgamated therewith, whether they also enter physically into the finished product, or are used only in the production of force. Intelligence, which is a necessary element of all products, exists only in the individuals of the species

whose lives are limited, and therefore all production involves the consumption (by amalgamation) of natural average faculties, i.e., of some portion of the life of a slave. For the reasons stated on page 108 of this book we can, in relation to Cosmopolitan Economy, substitute natural average faculties for intelligence as an element of production, as a man does not hire out or exchange his human force separately from his intelligence. Thus, of the three ultimate elements of production, natural objects, force (cosmic and produced), and intelligence, the normal valuation of the first two at a given time and place is based only on the quantum of natural average faculties necessary to be expended on similar objects or sources of force, which in their natural condition are valueless (Props. 11 and 13). Certain coal (which we will call X), situated near its sole market for consumption, will pay a royalty, which is the valuation of such coal in its natural condition; other coal (which we will call Y), in all respects similar to X and similarly accessible, except that it is more remote from the market, also comes into the same market, which, as with X, is its only available market, to meet the quantum of effective demand beyond what X can supply. Supposing, in order to simplify the illustration, that all the requirements of the market for force, except human force, are supplied by X and Y, and that Y coal exists in such abundance that it is practically undiminishing in regard to all requirements of the market, then the market and normal valuations of X coal and Y coal will be the same (Props. 9 and 11); Y coal will pay no royalty, i.e., it will have no value in its natural condition (Prop. 13), and the royalty payable on a quantity of X coal will be equal to the normal valuation of the

natural objects, force and natural average faculties, with normal hire-valuation thereon necessary to convey a like quantity of Y coal a distance equal to the difference between the distances of X and Y respectively from the market. The valuations of the natural objects and force consumed in such conveyance are similarly based on production, of which all the elements, except natural average faculties, are valueless (Props. 11 and 13). So that, subject to normal hire-valuation, Class 5 of capital ultimately measures the normal valuation of all multipliable objects.

The element of time enters into the normal hire-valuation. Suppose the most costly portion required of both wheat and larch trees to be grown on land which is valueless (Prop. 13); suppose also the expenditure on cultivation to be reducible in each case to equal quantities of natural average faculties: the penultimate exchange into money can be made of the wheat in one year, but of the larch not till after sixteen or seventeen years; the normal valuation of the larch, when harvested, in relation to wheat must therefore be equal to the accumulations resulting from exchanging and re-exchanging the proceeds of the wheat, so as continuously to earn the normal valuation (Prop. 1) until the larch is harvested. In commercial phrase, the larch when sold must pay compound interest on the cost of growing it to make it pay. With this qualification the terms of this proposition do not differ essentially from what has been held by nearly all economists, that labour is the ultimate element of value.

This element of normal hire-valuation enters largely into the normal valuation of one of the classes of capital utilised in the production of multipliable objects, viz., Class 6, Acquired Superiorities in Human

Faculties. Under the methods adopted in civilised societies, such acquired superiorities are called for in the production of most things. We have already seen (First Book, page 38 *et seq.*) that such superiorities are educed by the expenditure of intelligence upon intelligence. In our supposed slave-holding community it is evident that the normal hire-valuation of a slave, with high scientific, mechanical, or commercial attainments, must be sufficient to reimburse the expenditure for the instructor, the maintenance of the instructee, the hire of his natural faculties lost during the process of education, and the accumulated normal hire-valuation on all these. We shall have to refer again to this in dealing with the relative normal valuations of the different forms of capital.

Legal rights *in posse* (such as patent rights) are also, under ordinary civilised laws, part of the capital necessary to be amalgamated in educing some products. This is remuneration for something which is not multipliable, i.e., the inventive faculty. In this respect it is remuneration for a natural superiority of faculties, but it is different from the product of an artist to which we have referred, because, although a man cannot at will multiply useful inventions, the benefit of his inventions is indefinitely multipliable in future production. This legal right of inventors is something which often enters into the normal valuation of certain multipliable products, but which is not resolvable into Class 5 of capital. But although it is not so resolvable it is limited by Class 5. The remuneration to the inventor cannot exceed the normal valuation of Class 5 saved by his invention. The remuneration, however, for some inventions (not sufficiently numerous to interfere with our general conclusions) is hardly

susceptible to such limitations; the telephone, for example, provides something for which no quantity of Class 5 of capital can provide a substitute.

PROP. 15. *The normal valuation of a slave (natural average faculties) is reducible to terms of staples dissolved directly and indirectly in his production, and normal hire-valuation thereon.*

The meaning we have attached to the word 'staples' (see First Book, page 68) is the products necessary to the existence of the individuals of a human community in the state for the time being of civilisation. All other products we distinguished as non-staples. While Class 5 of capital, *plus* normal hire-valuation, measures (Prop. 14) the normal valuation of staples in common with all multipliable products, as regards staples this converse proposition is true. Just as horses and oxen represent so much corn, fodder, &c. (the staples of their economy), consumed in the amalgamations of capital necessary for their production and training, so a slave represents staples amalgamated in his production and hire-valuation thereon, falling under the three heads indicated on page 186, i.e.—

1. Staples actually amalgamated in his production consisting of (a) a small portion of the staples consumed by his father; (b) a large portion of the staples consumed by his mother, representing her consumption while withdrawn from otherwise utilising her faculties, during pregnancy, suckling, &c.; (c) staples consumed by the young slave until his faculties become productive; (d) a portion of the staples consumed by him in the period between the commencement of the utilisation of his faculties in production, and the time when

his annual surplus production first equals the normal hire-valuation on his normal valuation.

2. Staples expected to be otherwise dissolved in the processes of production, i.e., the average capital (see Prop. 11) which, from any of the causes of destruction mentioned in Chapter III, may be expected to be lost by a productive-amalgamator engaged in the business of slave-rearing. Such losses might arise from still-birth, death of the mother in child-bed, death of the young slave in early years, accidents or disease reducing the productive powers of his faculties below the average, &c.

3. Normal hire-valuation on both the foregoing.

PROP. 16. *The normal hire-valuation for a year of a slave's natural average faculties will equal the normal valuation of the surplus products of staples, which can be produced by such faculties in the same period on the most costly site necessary to supply the effective demand for staples.*

Such land has no buyer's valuation in respect either of the constituents of the soil or the advantages of site (Prop. 13), but its cultivation is required by the demand for staples, and it must, therefore, pay the normal hire-valuation on the capital necessary for the cultivation, i.e., the normal valuation of the products on the spot, when ready to be sent to market, must be sufficient to replace the capital dissolved and pay normal hire-valuation on all the capital employed in their production (Prop. 11). But the surplus products will not be such as would result from the unaided efforts of one slave, but such

as are possible under the most improved methods in the state for the time being of human knowledge. One of the chief of these improved methods is the co-operation possible by production on a large scale (First Book, page 50). Also the co-operators would be further aided by such useful machines as the inventive faculties of mankind had, up to the time, educed to assist the production of staples. The surplus products resulting from the production of such staples would, therefore, be divisible as hire-valuation over the valuation of several slaves and the valuation of several machines. But this presents no difficulty to the working out of our proposition, because such machines are reducible to the common denominator of slaves (Prop. 14), and it is, therefore, only a question of dividing the total surplus products by so many slaves, to ascertain the portion attributable to each. The only element in the production which is not reducible to the common denominator of average human faculties is the remuneration for the faculties, as distinct from his other capital, of the productive-amalgamator. The generation of a freeman is, as we shall presently show, controlled by influences different from those which lead to the generation of a slave. But, while slavery existed, free faculties, as we shall see in the next chapter, would have to compete with enslaved faculties, and, therefore, the faculties of the productive-amalgamator could only enter into the cost as the faculties of a slave, with a co-efficient to represent the expenditure requisite to endow a slave with the necessary acquired faculties for management.

Surplus products in our first book (page 46) we defined as 'gross products *minus* what is necessary

for the existence and for making good the depreciation of the producers,' i.e. for maintaining undiminished the numbers of the community. In connexion with the last proposition we have shown what staples are required to this end. At the risk of pleonasm we will further illustrate the tendency noted in this proposition. Normal hire-valuation, it will be remembered (see page 183), is that common level of stability for the time being in the rate paid for the temporary use of capital, above which the supply of any form of multipliable capital for hire tends to increase, and below which such supply tends to decrease. A productive-amalgamator producing slaves for hire, if he could not obtain for their hire the equivalent of their surplus production on the most accessible of the unappropriated lands, would have the option of utilising them on such lands. If thereby the quantity of staples produced by the community exceeded the effective demand, the market valuation of all staples would fall below the normal valuation. The cost of feeding and maintaining slaves in the production of non-staples would thereby be reduced, the profits of productive-amalgamators engaged upon non-staples would increase, and slaves engaged in the production of staples would be diverted to non-staples, until the reduced production of staples once more caused their market valuation to rise to or above the normal valuation. Similarly, whenever the productive-amalgamators producing staples received more for their surplus products than the equivalent of the surplus production on the most costly land in the terms of this proposition, all productive-amalgamators possessing money or debts would (Prop. 10) resort to the production of staples on unappropriated lands until

the market valuation of staples was reduced. It is in this way that the actual production of staples and non-staples accommodates itself to the objective and subjective limits investigated in our first book. It was there shown that (page 73) the production of non-staples at a given time in a community is limited, objectively by the quantum of intelligence freed from the production of staples, and subjectively (Chapter VIII) by the determination of the individual whether he will alternatively rest or produce non-staples. On the hypothesis of slavery the subjective limitation would not operate; the option of rest would only be enjoyed by the few productive and technic-amalgamators, and practically the whole quantum of faculties (intelligence) released from the production of staples would be directed to the production of non-staples for, or in rendering immaterial services to, the luxurious few.

But even in these simple conditions the productive-amalgamators evolving staples would be unable to gauge accurately the quantity of land necessary to be cultivated to supply the effective demand, and it would be only by the reflex action of the market price, resulting in excessive or insufficient hire-valuation of their capital, that they would learn whether they were applying more or less intelligence to the production of staples, than the economic conditions of the community for the time being required.

PROP. 17. *The ratio for the time being between the normal valuation of capital and its normal hire-valuation is that existing between the normal valuation of an average slave in terms of staples and the surplus products of staples which can*

be produced by an average slave, on the most costly site necessary to supply the effective demand for staples.

It is evident that the normal hire-valuation of a slave's faculties in the production of staples must regulate the normal hire-valuation in all other fields of production. Staples proportionate to the numbers of the community have the first call on its productive capabilities (see First Book, page 73), and for the production of staples and non-staples alike the natural average faculties of a slave would have, at the same time and place, only one market valuation and one rate of hire-valuation (Prop. 9). This proposition only summarises the conclusions led up to in the last three propositions, but its terms are necessarily complex, and it will appear clearer if shown algebraically.

Let the ratio of normal valuation to hire-valuation for one year be $1 : x$.

Let h represent the average surplus production of staples of an average slave for one year, on such most costly site.

Let d represent the normal valuation of an average slave in staples, ascertained as in Prop. 15.

Then $1 : x :: d : h$.

whence

$$x = \frac{h}{d}$$

d , however, is a quantity into which x enters, as by the terms of Prop. 15 it is made up of staples dissolved, *plus* normal hire-valuation (i.e., x) thereon.

Let the quantity of staples amalgamated and otherwise dissolved (Prop. 15) in the production of an average slave to the time of maturity of his faculties be equal to an annual average expenditure equal to a , and let b represent the number of years during which

the annual quantity a has been amalgamated or dissolved in such production. Some portion of such staples would be consumed before his birth, other portions during childhood and adolescence, and some portion during the year preceding his maturity. The exact calculations of the quantity invested in each year over which the production extends would be obviously extremely complicated, and, in order not to needlessly encumber the reasoning, we wish to assume that the complicated calculation has been made, and that, if an annual quantity a were invested b years, it would be equivalent to the investment of the actual varying annual quantities extending over the whole period.

It is evident that the element of compound interest would enter into the calculation, for, if a capitalist can get a return of yx on his capital (y) at the end of one year, he will for the second year, if he add the first year's hire (yx) to the original investment (y), require for hire-valuation $x(y + yx)$. Adopting the algebraical formula for the amount of an annuity of a for b years, at x rate of interest, we find that the normal valuation of a slave in terms of staples is $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$, and substituting this for d in the above equation, we get $x = \frac{h}{a \left\{ \frac{(1+x)^b - 1}{x} \right\}}$; h it must be remem-

bered (see page 195) is gross products, *minus* what is required (1) for the existence and (2) for making good the depreciation of the producer, and in respect of the latter deduction x also enters into it. Under conditions of slavery (1) would be a fixed quantity, but (2) would vary with the value of x , i.e., it would be required to abstract annually such a quantity from

gross products of staples less the quantum for existence as, in a fixed period say e years (the working period of a slave) at x interest, should amount to $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$, and if $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$ were a fixed amount, a smaller or greater annual abstraction would be necessary, according as x was great or small. But $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$ is not a fixed amount, but itself varies similarly with the value of x . The problem is—What amount must be deducted annually from gross products, less the quantum for existence, and accumulated for e years to make good the depreciation of the producer?

Let f be such amount.

Then by the algebraical formula the amount of an annuity f for e years at x interest is $f \left\{ \frac{(1+x)^e - 1}{x} \right\}$ and a , b , f and x must be of such values respectively that—

$$f \left\{ \frac{(1+x)^e - 1}{x} \right\} = a \left\{ \frac{(1+x)^b - 1}{x} \right\}$$

It must also be noted that the ratio indicated in this proposition will not be that based on the production of a slave in one year of his prime, or in one year when he has fallen into decrepitude, but an average worked out over the whole period extending from maturity to death; this will be made clearer by the next two propositions.

The reader will note that in the foregoing we have used the word value in its algebraical sense. It has a special meaning attached to it in this work as an economical term in accordance with the definition on page 101, but in connexion with algebraical formulæ we shall continue to use it in its ordinary algebraical

meaning; the context will show which signification is attached to it.

Before drawing our conclusions as to the causes controlling, under conditions of slavery, the ratio of normal valuation to normal hire-valuation ($1 : x$), it will be well to examine the problem from another point of view.

PROP. 18. *The normal valuation, in terms of natural average faculties or staples, of the legal right to future capital reducible to terms of natural average faculties or staples (Props. 14 and 15) will be the quantity of such future capital in such terms, less so much as under the known conditions will suffice to provide normal hire-valuation on such normal valuation.*

We are leaving out of consideration for the present the question of risk. This proposition only expresses in our terminology the mathematical rule for determining the present value of deferred payments. Such payments are 'discounted' in respect of the time elapsing till they become due, so that the future capital will equal the present valuation, *plus* the given rate of interest (compound if more than a year) thereon. When the future payments are periodical and of equal amount, they are called an annuity. If the annuity be permanent, the present value is the sum upon which the annuity will pay the given rate of interest; there is in such case no question of repaying the assessed present value, as the hire or interest never reduces or terminates. If the annuity be terminable, the present value of the whole annuity is the aggregate of the present value of each of the several future payments. It follows that, pending the falling due of the first

payment, the present value increases from day to day in respect of the *ad interim* interest, and, upon the first payment, the present value of the remnant of the annuity decreases. Such first payment would provide the interest up to the time of such payment on the whole present value of the annuity, and the portion of the aggregate present value attributable to itself; the value of the annuity immediately after the first payment is therefore reduced by the amount of the portion so attributable, and by the interest which, for the time elapsed, had accrued on the original present value of all the remaining payments.

To save circumlocutions we will adopt in our further inquiries the following term with the meaning attached :

DISCOUNTED VALUATION is the normal valuation of future capital, ascertained by discounting such future capital at the rate of normal hire-valuation.

PROP. 19. *The normal valuation of an average slave at or past maturity is equal to the discounted-valuation of the staples, less those necessary for his future maintenance, which his faculties applied to the production thereof might be expected to produce on the most accessible unappropriated lands.*

From this point of view we are not concerned with the deduction from gross products necessary for making good the depreciation of the producer ; the slave is a potential terminable annuity of the quantum of his future gross production, less only the cost of his future maintenance, and his normal valuation would be calculated on that basis, in the manner indicated in

the preceding proposition. The terms 'gross products' and 'net products' have been previously defined and explained, and it will be convenient to adopt the phrases 'terminable net products' and 'terminable net production' to express this intermediate stage between gross and net products and gross and net production.

In our analysis of the cost of a slave in the demonstration of Prop. 15 we included (1 *d*) 'a portion of the staples consumed by him in the period between the commencement of the utilisation of his faculties in production, and the time when his annual surplus production first equals the normal hire-valuation on his normal valuation.' Up to that point he must still be considered an item of expense, equal to the amount by which his early youthful gross production falls short of (1) his maintenance and (2) normal hire-valuation on his normal valuation. Prior to this point the question of depreciation does not arise; his valuation appreciates as the date of his maturity approaches. Let us suppose the age of maturity to be 20. From the nature of his race, his productive powers will continue to increase for some years, then for a further period remain stationary, and then reduce, until finally they cease altogether. Let us suppose that from 20 onwards, his terminable net production will proceed in the following progression:—

From 20 to 34 inclusive	$c - 4g, c - 3g, c - 2g \dots \dots c + 10g$
„ 35 „ 39 „	$c + 10g$ (stationary)
„ 40 „ 49 „	$c + 9g, c + 8g \dots \dots c$
„ 50 onwards	$c - g, c - 2g,$
and assuming $ng = c$ to $c - (n - 1)g$	

Then, subject to deduction for risk, the normal valuation of the slave of any age would be the aggregate of the discounted valuation of the unexpired terms

of the above series. He is, in fact, a terminable annuity but of varying annual amounts; the words, 'which his faculties applied to the production thereof may be expected to produce' in this proposition, are intended to cover the necessary deduction for insurance against destruction of the slave, from any of the causes noted in Chapter III.

In focussing together the conclusions drawn in the foregoing proposition and in Prop. 17, we must explain a little further the hypothesis.

c is taken throughout to represent the average annual terminable net production of an ordinary slave.

$c - 4g$ is assumed to be the year's terminable net production at the point at which terminable net production arises; up to that age his production is assumed to be not more than sufficient for his annual maintenance.

The slave is assumed to first attain the c scale of production at 24; his period of highest annual production is supposed to be from 35 to 39, but that would not necessarily be his period of highest valuation, as, like a horse, the approaching period of degeneration would be in view. Let us suppose the age of highest valuation to be 25 and that his normal valuation at that age is $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$ in accordance with Prop. 17. (In arriving at $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$ deduction would be made for the amount of his annual production between 20 and 25 in excess of $c - 4g$, but that is not material to the argument.)

PROP. 20. *The normal ratio of hire-valuation to normal valuation is such that the net cost of an average slave in staples at the age of highest*

valuation, plus such normal hire-valuation thereon, will equal the discounted valuation (at such normal rate of hire-valuation) of the future gross products of staples, less the staples necessary for his future maintenance, which his faculties applied thereto may be expected to produce on the most accessible unappropriated lands necessary to meet the effective demand for staples.

This proposition, to which the foregoing reasoning leads, is necessarily involved in its terms, but in the algebraical terms used in this chapter it reduces itself to the statement that the value of x is such that $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$ equals the sum of the series indicated in the last proposition, commencing at the age of 25 (hyp.) and discounted at the rate of x . The truth of the proposition follows from what we have previously established in Props. 8 and 10. If we suppose one productive-amalgamator to be engaged in breeding and rearing slaves, and another in acquiring and utilising their faculties, the rate of hire-valuation on their respective capital will (Prop. 10) tend to equality.

If the reasoning in this chapter be correct, it thus appears that the ratio of normal valuation to normal hire-valuation would, in a state of slavery, work itself out on the most costly lands required to be cultivated to meet the effective demand for staples. The working out would involve the solution of the complicated problems of the preceding two propositions, but the solution would be found—*solvitur ambulando*—by the tendency of money and book debts (Prop. 10) to flow to the amalgamations giving, for the time being, the highest, and to recede from those giving the lowest, rates of hire-valuation: the like problems are solved in

the breeding of horses, and regulate their normal valuation and normal hire-valuation.

Care must be taken not to confuse the ratio of normal valuation to normal hire-valuation with the hire-valuation, which might be paid for a slave say for one year, in accordance with the terms of Prop. 16. If such year were at the period of his highest productivity (see Prop. 19), the rate for that year would be more than the normal rate, and, if at a period when his productivity would be estimated at less than c , the rate would be less than such normal rate: the amount paid for the hire of such slave in a year of high productivity would have to be split up into the portion representing his simple hire, and the portion representing the contribution towards the consumption or depreciation of the slave as wasting capital, having regard to his varying productivity over the whole period of his working existence.

CHAPTER VII

VALUATIONS (*continued*)

BEFORE we examine how the foregoing conclusions are affected under conditions in which (1) free faculties are hired out in competition with slaves or (2) slavery is non-existent, it will be well to trace a little farther the working under conditions of slavery of the principles enunciated. Under the supposed conditions of slavery, excluding for the time the competition of free labour, let us first investigate the influences which would tend to increase or decrease the normal rate of hire-valuation.

By Prop. 17 it appears that the normal valuation of a slave (at the age of 25 on the hypothesis of Prop. 19) in terms of staples is $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$. In this formula a (the average annual quantity of staples amalgamated in the production of an average slave) and b (the time a lies unproductive) are, under conditions of slavery, fixed, and $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$ will be great or small according as x varies. If the normal rate of hire valuation be great—say 10 per cent.—the capital valuation of a slave $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$ will be vastly greater than if such rate were low—say 4 per cent.

On the other hand, in calculating the valuation of a slave from the other point of view indicated in Prop.

19, a high rate of hire-valuation will have the opposite effect; the discounted valuation of the sums of the several series entering into a slave's valuation will tend to be much greater when x (the rate of hire-valuation at which the sums are discounted) is small than when x is great; so that the valuation of a slave, ascertained on the basis of the discounted valuation of his estimated future terminable production, will be much greater if the normal rate of hire-valuation be 4 per cent. than if such rate be 10 per cent.

Let us first consider the mathematical variations arising in the determination of the value of x , under the condition that $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$ shall equal the present value, discounted at x rate, of the series indicated in Prop. 19. To get rid of needless complications let us assume that such series, being the slave's terminable net production, together equal a fixed terminable annuity c payable for e years; this assumption in no way affects the point we are investigating, i.e., the effect of variations in the rate of discount on the present value of a number of future payments. Our question will then resolve itself into this:—At what rate (x) per cent. must an annuity of a be accumulated at compound interest for b years, so that its amount shall equal the present value of an annuity of c payable for e years? Reducing this to algebraical formulæ we get $a \left\{ \frac{(1+x)^b - 1}{x} \right\} = c \left\{ \frac{1 - \left(\frac{1}{1+x} \right)^e}{x} \right\}$ and (by Prop. 17) also $= f \left\{ \frac{(1+x)^e - 1}{x} \right\}$; by the same proposition $c = h + f$ and $x = \frac{h}{a \left\{ \frac{(1+x)^b - 1}{x} \right\}}, f$ and h having the same representation as in Prop. 17.

The recapitulation of the propositions involved in these equations may be thus stated—production by an average slave, on the most costly lands necessary to meet the effective demand being understood.

1. The ratio of annual normal hire-valuation to normal valuation is equal to a slave's annual average surplus production divided by his cost

at maturity, i.e., $x = \frac{h}{a \left\{ \frac{(1+x)^b - 1}{x} \right\}}$ Prop. 17.

2. The deduction for depreciation (f) from a slave's average terminable net production (c) must be such an amount as accumulated at such normal rate of hire-valuation (x), for a slave's average working period (e) shall equal the cost of a slave at maturity; i.e.,

$$\frac{f(1+x)^e - 1}{x} = a \left\{ \frac{(1+x)^b - 1}{x} \right\} \text{ and } f = c - h. \text{ Prop. 17.}$$

3. The present value at the age of maturity of the estimated future gross production of a slave less only maintenance (c), discounted at the rate of normal hire-valuation (x), must equal his normal valuation and cost at such age; i.e.,

$$c \left\{ \frac{1 - \left(\frac{1}{1+x} \right)^e}{x} \right\} = a \left\{ \frac{(1+x)^b - 1}{x} \right\} \text{ Prop. 20.}$$

The author's knowledge of mathematics is insufficient to enable him to say whether the relation of x to a , b , c , d , e , f , and h is determinable from the foregoing equations; he has therefore attributed varying figure values to the several quantities, for the purpose of tracing the effect of the several equations.

Let us first attribute the following values :—

$$a = 10$$

$$b = 25$$

$$c = 12$$

$$e = 38$$

i.e., we assume that the cost of producing a slave is, at the age of maturity (25), the equivalent of 10 units of staples per annum accumulating for 25 years; that from 25 onwards his varying faculties will, after providing for his personal maintenance, produce the equivalent of twelve units of staples per annum for 38 years. It will be found that with these values x to comply with (3) is nearly 0.02 or 2 per cent; at that rate

$$a \left\{ \frac{(1+x)^b - 1}{x} \right\} = 320.303 \text{ units}$$

$$c \left\{ \frac{1 - \left(\frac{1}{1+x} \right)^e}{x} \right\} = 317.287 \text{ units}$$

and the normal valuation of a slave on the hypothesis of the attributed figures would be between those figures, say 319 units.

Next let us suppose that, by some invention or discovery, the value of c is increased from 12 to 20 units, i.e., that the products (less his personal maintenance) evolved by an average slave are increased by $66\frac{2}{3}$ per cent. To satisfy (3) it will be found with these values that $x = 0.0375$ or $3\frac{3}{4}$ per cent. nearly: at that rate

$$a \left\{ \frac{(1+x)^b - 1}{x} \right\} = 402.71 \text{ and } c \left\{ \frac{1 - \left(\frac{1}{1+x} \right)^e}{x} \right\} = 401.675.$$

Having determined the value of x to comply with (3) the propositions (1) and (2) follow as corollaries: thus, on the first hypothesis ($c = 12$), the normal valuation of a slave is between 320.303 and 317.287; the

value of the annual sinking fund to produce the mean of those amounts at 2 per cent. in 38 years is 5·681 nearly, thence it follows (2) that $(h = c - f) = 6·319$, and that amount which is the net annual production after providing for both maintenance and depreciation, divided in accordance with (1) by the normal valuation of a slave gives 0·02 nearly—it would give that figure exactly if our calculations had been exact. Similarly, on the second hypothesis ($c = 20$), f it will be found equals 4·944, whence $h = 15·056$, and the last figure divided by the normal valuation of a slave gives 0·0375 nearly.

It will be noticed that the effects of increasing the gross products less maintenance (i.e., c) from 12 to 20 or by $66\frac{2}{3}$ cent. are—

1. To increase the normal valuation of a slave from 319 units to 402 units or by 26 per cent. nearly.
2. To increase the rate of normal hire-valuation (x) from 0·02 to 0·0375 or by $87\frac{1}{2}$ per cent. nearly.
3. To reduce the annual deduction for depreciation (f) from 5·681 to 4·944 or by 13 per cent nearly.
4. To increase the annual net surplus products (h) from 6·319 to 15·056 or by 138 per cent nearly.

From the foregoing calculations it results that, under the hypothetical conditions of slavery, although by operation of the inventive faculty or otherwise the net surplus production *per caput* might be suddenly increased by 138 per cent., the rate of normal hire-valuation would only thereby be increased $87\frac{1}{2}$ per cent.; the difference would be absorbed by the increase in the capital valuation of a slave in terms of units of staples, attributable to its augmentation at the higher

rate of hire-valuation. The converse is likewise true—that a reduction in net surplus products *per caput* will involve a reduction, but not *pari passu*, in the normal rate of hire-valuation. An increase or decrease in the ratio of surplus production also involves an increase or decrease, not *pari passu*, in the normal valuation of a slave in terms of staples.

Such being the immediate mathematical results, we will attempt to trace the probable ultimate effects, in view of human impulses (see First Book, Chapter VII), of the supposed increase in the quantity of net products of staples *per caput*. The limited element of production, intelligence, being enslaved, it would not rest with the units of such intelligence to determine what should result from the new conditions of production. The determination would at the outset lie with the productive-amalgamators. A smaller number of slaves would be required for the production of staples, and the first effect of the increase would be to transfer a large number of slaves to augment the number engaged upon the production of non-staples and on immaterial services. The number of zones of production (see Book I, page 76 *et seq.*) would be reduced; the population of slaves on the least favourable sites would, for the time being, be withdrawn and on the other sites diminished, and the released units would concentrate in the centres of production of non-staples and in the residential districts of capitalists. The relative valuations of capital *inter se* would vary under consequential laws which we will investigate presently, some capital, e.g., the remoter zones (the ultimate zone having no valuation would not be capital) applied to the production of staples, might be destroyed as such; and, as shown above, the rate of normal hire-valuation

on the new normal valuations of all capital would mathematically increase.

The impulses controlling the body of capitalists under the new conditions would be (see Book I, Chapter VII), in the order of their relative strength,

1. The impulse for prolonged life.
2. The sexual impulse.
3. The impulse towards luxurious ease.

The first of these we may suppose gratified by the capitalists under the pre-existing conditions; the release of a number of slaves from the production of staples would render possible the gratification of the second and third impulses to a greater degree by the capitalists in the aggregate, although in individual cases such gratification, owing to the destruction or diminution of certain capital indicated above, would be restricted.

The destruction of capital would have for its first effect a diminution in the number of capitalists owning capital other than their natural faculties. Some owners of the remoter zones would see their extraneous capital disappear, and would descend to the level of Class 5 of capitalists, whose position, working side by side with slaves, we shall presently investigate. The reduction in the normal valuation of other capital (e.g., of the less remote zones) might have its effect on the capitalists' income counteracted by the increase in the rate of normal hire-valuation, which might give the owner the equivalent of the smaller hire-valuation on the pre-existing higher valuation. The owners of slaves released from the production of staples would either employ them, or hire them out to produce non-staples or to render immaterial services.

If the number of capitalists did not increase and

the number of slaves remained constant, there would obviously ensue a more luxurious state for the capitalists than that pre-existing the supposed discovery. But immediately after the first effects reactive influences would begin to operate. The productive-amalgamators owning slaves would allow an increased gratification of the sexual impulse of such slaves, so as to continually increase the number of slaves available for the production of non-staples or for immaterial services, whereby either the luxury of the existing capitalists would be intensified, or the number of capitalists enjoying an undiminished degree of luxury could be increased. This increase of slaves would naturally go on until, not only the abandoned zones had been brought back into cultivation, but remoter zones which, under pre-existing conditions were beyond the productive area of the community, would with the increased productivity be included therein. Under conditions of slavery the area of cultivation would always tend to extend up to the remotest zone at which, in the state of knowledge for the time being, surplus production began, for, so long as any surplus over the maintenance and depreciation of the producers on such remote zone was available, the number of ministers to luxurious ease would thereby be increased. The producers required to be maintained and depreciated out of the produce of the remoter zones would include of course the units of intelligence employed in transporting the produce to the place of consumption.

This continuous extension of the area of production, inducing a reduction of the ratio of surplus production, involves, as we have seen above, a reduction in the rate of normal hire-valuation and in the normal valuation of a slave, and, as a consequence, it would reduce

the normal valuation of everything evolved by the faculties of slaves. If we suppose a community in which all the productive-amalgamators were also co-owners of the advantages of site in equal shares, the tendency indicated would be effective to its utmost limit, for that limit is evidently the point at which—the cost and maintenance of a slave in staples remaining stationary—the greatest aggregate of intelligence would be available for non-staples and immaterial services. A contest under the institutions of private property and exchange, at a certain point of intensity of production, arises between advantages of site and all other forms of capital. The ratio of hire-valuation to valuation tends to equality for all forms of capital (Prop. 8); yet the production of the proximate zones under the same conditions of tillage would not diminish as, in obedience to the results on increasingly remoter zones, the rate of hire-valuation fell. In order to equalise the rate of hire-valuation for all capital, the normal valuation of the advantages of site would increase (Prop. 12), and that form of capital has the power of acquiring the right to all surplus production on any site, in excess of the rate of surplus production on the remotest zone of the cultivated area. The proximate zones may, with every increase in the cultivated area, be worked at a higher degree of intensity (see Book I, page 55 *et seq.*), but the increase in the normal valuation of advantages of site will at least be equal to that indicated. Advantages of site are thus, under conditions of slavery, the only form of capital which would ultimately benefit by the unchecked extension of the area of production, and the consequent reduction of normal hire-valuation. Every other form of capital under such conditions would,

as stated above, suffer ultimately a decrease of normal valuation as a consequence of the decrease in normal hire-valuation. Both principal and rate of interest, to use commercial terms, would be reduced. But the normal valuation of advantages of site would, under the like circumstances, increase, so that the lower rate of hire-valuation thereon would give a greater return than the higher rate of the pre-existing *status quo*. The owners of advantages of site in effect gain what the other capitalists lose.

If, then, all productive-amalgamators were equally interested in the advantages of site under the supposed conditions, they would cultivate remote zones nearly to the vanishing point of normal hire-valuation, i.e., the point at which surplus production began, as they would gain more on their advantages of site than they would lose on the other forms of capital. But if the productive-amalgamators were a body of capitalists distinct from the owners of advantages of site, the contest above indicated would arise between the two classes of capital, and the fall in the normal rate of hire-valuation, and in the normal valuation of all capital other than advantages of site, would, unless the owners of sites took up the duties of productive-amalgamators, stop at the stage, below which the productive-amalgamators refused to propagate their successors. That is the only point with which we are concerned for the moment, deferring the further consideration of the inter-relations of the two forms of capital.

It is obvious that contrary causes would produce opposite effects. A diminution in the population of the country, for example, would, *ceteris paribus*, raise the rate of normal hire-valuation and lower the normal valuation of advantages of site.

The following shortly summarises our conclusions to this point in this chapter, on the hypothesis that all owners only of average faculties, employed in production and in furnishing immaterial services to capitalists, are enslaved:—

1. An increase or decrease in the possible surplus production per unit of intelligence on the most costly cultivated lands will tend to bring about a temporary but not *pari passu* increase or decrease in
 - (a) The normal valuation in staples of natural average faculties, and
 - (b) The rate of normal hire-valuation.
2. The impulses of capitalists in the aggregate could, after every such increase, be most extensively and intensively gratified by the continuous multiplication of slaves and extension of the area of production, up to the point at which surplus production began, and this would destroy such temporary increase in the normal valuation of faculties and normal hire-valuation.
3. The tendency to reduction almost to vanishing point of the normal rate of hire-valuation enures to the benefit of owners of advantages of sites, at the expense of owners of other forms of capital.
4. Unless the productive-amalgamators were all proportionately interested in the advantages of sites, the extension of the area of production, and the consequent reduction in the rate of normal hire-valuation, might be arrested at a stage, below which the productive-amalgamators refused to perpetuate their class

by propagating free offspring to succeed them; but at that point the owners of sites might become their own productive-amalgamators and crush out the separate class.

5. Any cause, cosmic, political, or other, resulting in the depopulation of slaves in a settled country would, *ceteris paribus*, tend to bring about—
 - (a) An increase in the rate of normal hire-valuation.
 - (b) A decrease in the normal valuation of advantages of sites.
 - (c) An increase in the normal valuation of all other forms of capital.

We have now to inquire into the tendencies under the first of the hypotheses indicated at the commencement of this chapter, viz. :—under conditions in which free faculties are hired out, in competition with those of slaves.

We wish to shut out of consideration for the present the subjective causes, which are said to make the labour of freemen more effective *per caput* than that of slaves. Such causes undoubtedly operate and will be introduced into the argument later, but, for our immediate purpose, we wish to suppose that there exists in a slave-owning community a body of capitalists owning only their natural average faculties (Class 5 of capital), such faculties being as effective only as those of a slave.

As, under the hypothesis, the productive-amalgamators would possess slaves, which they could multiply indefinitely by allowing them the gratification of their sexual impulse, they would not, except perhaps

temporarily, pay more for the hire of free faculties than they would have to pay, directly and indirectly, for the hire of the faculties of slaves (Prop. 9). But competition *inter se* would prevent them paying less, and in consequence the position of Class 5 of capitalists would not sink down to the level of slaves. The productive-amalgamators, when comparing free faculties with those of a slave, would remember that, as regards the former, he was saved the investment and risk of capital to the extent of the normal valuation of a slave; he would therefore be willing to acquire for a period of years the faculties of a freeman on the terms of paying him, for each year's work, the equivalent of—

1. The actual cost of feeding, housing, and clothing a slave for one year, *plus*
2. The normal hire valuation for one year on the normal valuation of a slave, and *plus*
3. The annual amount required to be set apart for depreciation of a slave.

Let the equivalent in staples of $1 = k$, then, adopting the symbols used in this and the preceding chapter, the yearly payment to a freeman under the supposed conditions would be—

$$k + \alpha \frac{(1 + \omega)^b - 1}{\omega} + f$$

If, instead of hiring himself out for a period of years, the freeman engaged himself only for one year, the productive-amalgamators would, at the age of his higher production (see page 203), be willing to pay more than the above; they would, by competition *inter se*, offer him such a sum as, deducted from the gross production of himself and the other forms of capital

co-operating with him, would leave normal hire-valuation, insurance and depreciation on such co-operating capital. Like causes would operate to compel a freeman to accept less than the equivalent of the above formulæ for yearly hire, during the periods of early youth and old age.

The freemen could not in the long run by any combination *inter se* improve their position beyond the mathematical limits above indicated, as, under the hypothesis, any such combination would be met by an increase in the number of slaves, through the productive-amalgamators allowing their serfs a more extended gratification of the sexual impulse. The quantum of staples represented by the above mathematical expression would necessarily rise and fall with the value of x , and thus the possible quantum of staples, which a freeman could obtain as hire-valuation of his faculties, would tend to increase by the action of the inventive faculty and other causes tending to increase x , and would tend to decrease by the profit-absorbing powers of advantages of site above mentioned.

The possible increase in the quantum of staples representing their hire-valuation would not, however, bring a strictly proportionate benefit to the freemen, as the quantity of staples directly consumable by each individual is limited (Book I, page 69), and the normal valuation of such non-staples as they would seek to acquire in exchange for their surplus staples would also tend to increase with the increase of x . Similarly, such freemen would not be *pari passu* damnified by a decrease in the value of x .

The freemen under our hypothesis having thus the disposal of capital beyond what would be necessary

for their existence, the question arises, 'What would they do with it?' This is a subjective inquiry verging upon Individual Economy (see Book I, page 5), and all we can indicate here is what they could do with it. The following courses would be open to them:—

1. They could live more luxuriously than slaves, and at the same time gratify their sexual impulses to the extent of making good their own depreciation, i.e., adopting the notation above, they could live upon k , apply $a \{(1+x)^b - 1\}$ to the acquisition of non-staples for their direct consumption, and apply f to the generation and maintenance of the number of children necessary to replace themselves and the complementary females.
2. They could subsist on the same staples as slaves, and apply all the surplus staples, $a \{(1+x)^b - 1\} + f$, to the gratification of the sexual impulse, to a degree beyond what was necessary for making good their own depreciation.
3. They could apply all the surplus staples above k to the acquisition of luxurious non-staples for direct consumption, and neglect entirely to make good their own depreciation.
4. They could exchange such surplus staples for other forms of capital which would earn normal hire-valuation, and allow such capital and hire to accumulate by the like investment of the hire as received.
5. Between these four limits they could individually apply their potential staples above k partially in any of the directions indicated, with infinite possible variations.

These subjective possibilities would, however, be controlled by objective limitations. In order to get a clear view of the tendencies due to objective causes, we will suppose them operating in a self-contained community, such as was sketched in our first book (page 76 *et seq.*). The simplest conception of such a community will be a circular island, shut off from communication with the rest of the earth, consequently producing and consuming all the staples and non-staples that it consumes and produces, and with one town only in its centre, alike the site of the production of implements and non-staples, and of the residential districts of capitalists not personally occupied in production.

In our first book (page 73 *et seq.*) we investigated the economical point of a community, i.e., the degree of intensity in the production of staples which would give, per unit of intelligence, the largest quotient of staples and non-staples combined. That is the point which would give the greatest quantity of material comforts for distribution among all the members of the community including slaves, but, inasmuch as slaves do not share in surplus products, it is not, where slavery exists, the point which would give the greatest quotient among the capitalists, which, as shown above, would be the point at which surplus products (and hire-valuation of capital) first arise.

Where slavery exists the economical point, while not the most advantageous for all capitalists, would, for the mathematical reasons given above, be the point which afforded the highest normal valuation, and the point which would give the greatest quotient of non-staples *per caput* to the freemen owning only their own faculties.

Let us suppose that our hypothetical island is populated just up to the economical point, and that the remotest zone, brought into cultivation at the economical point (Book I, page 78 *et seq.*), is the fringe at the circumference of the island. We will, under these conditions, mark the objective tendencies of each of the four subjective options above indicated.

1. The annual application of k to existence, $a \{(1 + x)^b - 1\}$ to luxuries and f to making good their depreciation would tend, as far as such freemen were concerned, to the maintenance of production at the economical point. It would still leave the battle to be fought, as indicated above, between the owners of advantages of site and the productive-amalgamators, and, as in the course of such battle the value of x fell, the freemen would suffer by a curtailment of their possible luxuries.
2. The application of the whole of the products to which they became entitled in excess of k to the gratification of the sexual impulse would range them, to their own detriment, on the side of the owners of advantages of site, in the contest with the productive-amalgamators. The resulting tendency would be to carry production beyond the economical point, to reduce thereby the rate of normal hire-valuation and consequently to reduce the normal valuation of all forms of capital other than advantages of site. This tendency could be counteracted by the productive-amalgamators reducing the number of slaves,

by preventing the exercise of the sexual impulse, and at some point in the continuous fall of x , this would doubtless be done.

3. The application of the whole remuneration above k to the acquisition of luxurious non-staples would result in the gradual extinction of the class of capitalists owning only their own faculties, and their replacement by slaves.
4. The investment and accumulation at compound interest of all staples above k would tend to lift them out of the class of capitalists owning only their own faculties, but *ad interim* they would have to live as slaves, and forgo the gratification of the sexual impulse. The investment of their savings could only take the form of addition to the aggregate capital of productive-amalgamators, whereby the intensity of production would be carried beyond the economical point, and this, as stated above, would tend to benefit the owners of advantages of site at the expense of other capitalists.

If the intensity of production had already passed the economical point all the above tendencies would be quickened and intensified.

If the intensity of production had not reached the economical point the tendency under (1) would continue, but with an increase in, instead of curtailment of, their possible luxuries; in the advance towards the economical point the increase in normal hire-valuation would benefit alike all capitalists; under (2) the increase in their class could continue with advantage to all capitalists; under (3) the result would be the same as at the economical point, except that the luxuries at their disposal would be continually on the increase; under

(4) the accumulations could continue with an increase of x and resulting benefits to all capital.

The competition among productive-amalgamators would, as we have stated, induce them to give for the faculties of freemen as much as they were worth, having regard to the normal hire-valuation of the other forms of capital amalgamated with such faculties in production. In this way the freeman would get the benefit of the suggested higher productivity of his work compared with that of a slave. If one freeman, for example, did as much work as two slaves, a productive-amalgamator would pay him the equivalent of $2k + 2a\{(1+x)^b - 1\} + 2f$, and thus his powers above indicated, as regards luxuries, the sexual impulse and the accumulation of other forms of capital, would be more than doubled. In the varying periods of productivity (see Prop. 19) also the freeman would be paid, not according to his average annual production, but according to the varying results of his work in such periods, and in his period of highest productivity he would receive on this account considerably more than the remuneration based on the average production and depreciation of a slave. On the other hand, the freeman would be at liberty to work for starvation wages. If through immaturity, age, or natural deficiency his faculties produced less than those of a slave, he would have to accept less than the minimum based on slave labour indicated above. The productive-amalgamator would not even be constrained to ensure that the staples so receivable by a freeman were sufficient to sustain life; as the man belonged to himself, the productive-amalgamator would not be concerned to farm the faculties of a freeman to the best advantage, as he would if he were a slave or a horse.

The operations of the inventive faculty would, as pointed out in our first book, continually disturb the economical point and alter the position of the community in relation thereto; that would also, from time to time, increase temporarily the value of x , and induce the results of such increase above indicated.

Reviewing the conclusions drawn (page 82 *et seq.*) applicable to a state of slavery, we may note that they are not affected by the introduction into the community of capitalists owning only their own faculties.

If the profit-absorbing tendencies of advantages of site pressed too heavily (by the continual reduction in the value of x) on productive-amalgamators and free labourers, there would be a way of relief open to productive-amalgamators under conditions of slavery, and to them and free labourers alike where the latter co-exist with slaves. They could emigrate and form a fresh community in—to continue the terms of our illustration—an adjacent island. The early settlers would meet with privations, as they could not immediately attain the advantages of intensity of production, but under pressure in the parent island the number of emigrants would increase, and a community be formed, with an increasing value of x as the community progressed towards the economical point. This would check the fall in the value of x in the parent isle, to the advantage alike of the productive-amalgamators and the free labourers. The value of x would tend to equality in both islands, though, for reasons which we shall discuss later, certain retarding influences would prevent complete equalisation.

We are now in a position to discuss the natural tendencies under the second hypothesis indicated at the

commencement of the chapter, viz., under conditions in which slavery is non-existent. This hypothesis corresponds to the conditions now generally existing in the civilised world, and the determination of the laws controlling the relative valuations and hire-valuations, under the said conditions, of average faculties and of other forms of capital, is at once the most difficult and most important problem in Human Economics.

Where free labourers work side by side with slaves, we found that the normal hire-valuation of a slave was still the unit upon which the normal remuneration of a free labourer was built; with the abolition of slavery the unit becomes non-existent, and we have now to investigate whether any other determinate unit takes its place.

We shall continue to use k , a , f , &c., as symbols of similar but somewhat modified quantities: k will represent the minimum in staples required from time to time, in the state of civilisation for the time being, for the maintenance of an owner of average faculties for one year. This, as will appear in the argument, may be more than the cost of feeding, housing, and clothing a slave for one year, and such larger cost would involve in relation to free men consequential increases in the values of a and f .

Of the numbered propositions in the preceding chapters, 1 to 13 inclusive apply to a state in which slavery is non-existent. The production of natural average faculties in a state of freedom requires, as with a slave, the outlay of staples, during gestation of the mother and during the unproductive and partially productive periods of childhood and adolescence noted on page 193 *et seq.* But in the production of a slave, represented by $a \left\{ \frac{(1+x)^b - 1}{x} \right\}$, there is only one variant x , the

rate of hire-valuation, whereas in the production of free faculties where slavery is non-existent, in addition to x , a is also a variant, and would be greater or less according to the degree of luxury or semi-luxury, without which the owners only of free faculties would not be content to propagate. As shown above, under conditions of slavery or of free faculties working side by side with slaves, the value of x , and consequently the normal hire-valuation of average faculties, whether enslaved or free, would be the resultant of non-parallel forces of owners of sites on the one hand, and of productive-amalgamators on the other. The interest of the owners of sites would be to increase the production of slaves and reduce the value of x back to the point where surplus products arose, as by these means, as the valuation of x fell, the capital valuation of all sites would increase, and the share of surplus products allotted to other forms of capital would lessen; the productive-amalgamators, on the other hand, would, as stated above, seek to stop the production of slaves, when the consequent reduction of x made the conditions of existence for such productive-amalgamators too burdensome.

Where slavery is non-existent the hire-valuation of faculties and the value of x become the resultant of three similar forces: those pertaining respectively to the owners of sites, the productive-amalgamators, and the owners only of free faculties. It is clear that a resultant must be found, as all three classes are interdependent. There could be no advantages of site unless there were a population sufficient to force production in remote areas; the productive-amalgamators must be able to hire intelligence to combine with their other forms of capital, or production could not result, and

this element of production is only existent in the human species. The owners only of natural average faculties could not produce unless they were maintained during production and had natural objects to work upon, nor could they produce much above the limits of barbarism, unless in conjunction with extraneous forces and suitable tools, which, together with the means of maintenance, have to be provided by the productive-amalgamators.

In searching for the resultant of these forces it will be useful to see in what direction each is impelled, or, in other words, what conditions will secure to each the greatest relative advantages. Taking m to represent the total potential production of a community in staples and non-staples, our inquiry is, How would each of the three classes secure for itself the greatest share of m ? (By potential production we mean that, after providing for maintenance, the portion secured by the capitalists, other than the owners only of free faculties, might at will be converted into luxuries or applied to fresh productive investments, while that secured by the owners only of free faculties might be similarly invested, or take the form of semi-luxuries verging on necessities, or of partial abstention from production.) In order to simplify the problem we will suppose that the resultant is working itself out in an island such as we have indicated above.

The greatest share of m would enure to the owners of advantages of site if the owners of free faculties were content to work to the limit of human capacity, and to propagate on the bare necessities of slaves up to the degree of density at which surplus products arise on the remotest zone, i.e., at which x was at its lowest point; by these means the aggregate of surplus products

would be greatest, the shares therein of productive-amalgamators and of owners of free faculties would be smallest, and the balance divisible among the owners of advantages of site would consequently be greatest.

Productive-amalgamators, under the institutions of private property and free exchange, could not control the valuations or hire-valuations of advantages of site as the population of the island increased or decreased. Neither under free institutions could the productive-amalgamators control the increase or decrease of population, as the owners of free faculties would have all the options of application of their hire-valuations noted on page 221. Subject to what is stated below, the productive-amalgamators would be interested (although they could not control it) in raising x as high as possible, and x would be raised to its highest point at a density of population corresponding to the economical point (First Book, page 76 *et seq.*), with the owners of free faculties content to labour and make good their depreciation on the bare necessities of slaves.

Up to the economical point the interests of owners of advantages of sites and of productive-amalgamators are parallel, both being benefited by the compression of k to its lowest working quantum. If we suppose that k has been kept at its lowest point, i.e., that the owners of free faculties have been content to exist and propagate on the bare necessities of slaves, it is obvious that, in the present state of control over cosmic and produced forces and of economy of intelligence, the algebraical value of x at the economical point would be very high—we may suppose as high, at least, as 0.5, or 50 per cent. Under those conditions it is obvious that population and production would be

encouraged to go beyond the economical point, for that point, though it gave the greatest value to x and the highest quantum of surplus products per unit of intelligence, would not give the greatest amount of luxuries to the productive-amalgamators. With little abstention from the immediate consumption of their share of m , they would be able to provide the necessary forms of capital whereby, although x gave them a smaller relative share in m , the quantum of m , and thereby their potential luxuries, would be greatly increased. Or, if the productive-amalgamators immediately consumed all their share of m and sought to keep production at the economical point, the owners of sites would have such a strong incentive to induce a further increase of production, that they would themselves apply part of their share of m to productive-amalgamation.

Except, however, so far as the inventive faculty further economised intelligence in its application to production, the quantum of m , before and after the economical point was attained, could only, under the supposed circumstances, be increased by an increase in the quantum of intelligence, i.e., of population, and to bring about such increase the owners of free faculties would have to receive a larger share of m than the bare necessities of slaves providing only for their own depreciation. The wage, under the circumstances named, would have to be sufficient to induce the owners of free faculties without compulsion to increase the working population. On the other hand, as they would own themselves, there would be nothing to compel them to insist on receiving the normal hire-valuation of their hypothetical normal valuation, and that term $a\{(1+x)^b - 1\}$ (see page 219) we can omit.

Thus the equivalent in staples paid to them annually would have to be $k + f + n$, n being *inter alia* the addition to induce increased propagation, which would be small or large according to the relative strength of the sexual impulse in the owners of free faculties and the urgency of demand for further free faculties.¹ When the scale of production had passed the economical point, the value of x would fall, and a point would be reached, the same as under conditions of slavery indicated on page 215, at which the interests of productive-amalgamators and owners of sites would diverge. At that point the productive-amalgamators would cease to stimulate the further increase in the quantum of intelligence, and the value of n would fall, but would still have a value, as the owners of sites would continue to encourage an increase.

The above reasoning is on the hypothesis that the owners of free faculties would be willing to exist and propagate beyond making good their depreciation on the bare necessities of slaves. The history of all free countries tends to show that, with a continuous increase in the surplus production per unit of intelligence, and the consequent rising value of x , they would not be content with the prior conditions of existence. The causes which operate to bring about this discontent are easily traceable. Their minimum remuneration, under the conditions stated above, would be at their optional disposal in any of the ways indicated on page 221, and there would be no compulsion on them to apply thereout $f + n$ to their own depreciation and increase. If the value of x were as high as 0.5, the inducement to save instead of

¹ It will be necessary to subdivide n in our subsequent investigations.

propagating would be very strong, for everything they saved would, if x remained at 0.5, more than double itself in two years, and thereafter provide more than its equivalent annually without labour. This would tend to a disproportionate increase of other forms of capital in relation to free faculties, and, as such capital could not be effective in production without intelligence, a keen competition, among productive-amalgamators and other capitalists desirous of personal services to minister to their secondary impulses, would arise for the all-important free faculties offering for hire. The value of n would rise and that of x would fall, until there was no longer an inordinate inducement to the owners of free faculties to climb over the fence into the ranks of the productive-amalgamators, but in lieu thereof to expend their surplus earnings upon the gratification of the sexual impulse, and thereby provide for their depreciation and increase the labouring population; the lower the value of x the less inducement there would be to save their surplus earnings. The recipients of wages would not distinguish between k and n , and the latter would tend to be utilised by them as permanent additions to k and reflectively to f . In course of time these improved conditions of existence would create new habits in the owners of free faculties, so that they would become no longer content with the same minimum of staples, which sufficed for a former generation.

Up to the economical point of production, which would vary according to the value for the time being of k augmented from n as above (involving consequential alterations in f), there would be a continuous struggle between k so augmented and x , i.e., between the owners

of free faculties, and the productive-amalgamators and other capitalists, in which temporary advantages would be gained by each, but in the result each would probably increase, dividing between them the surplus growing with increased intensity of production. Each would be dependent on the other, for, when progressing towards the economical point, while the owners of other forms of capital would require an increase in the number of owners of free faculties, the latter would be equally dependent on a *pro rata* increase in the other forms of capital whose amalgamation is necessary to production, and without which the further progress towards the economical point would be stopped. When the economical point was passed, any further increase of population would cause renewed struggles between k and x , resulting in a general decrease in the value of both; such increase of population, as stated above, would be to the detriment alike of the productive-amalgamators and of the owners of free faculties, and to the advantage only of the owners of sites.

Owners of free faculties it thus appears, in so far as they are desirous of simply consuming, in the immediate gratification of their impulses, the share of m which they can secure, are interested in keeping the value of $k + n$ as high and the value of x as low, as will allow of the provision of the other-forms of capital necessary to production; in so far as they are desirous of acquiring other forms of capital, they are concerned to prevent x falling to such a point, that the rewards of saving are so small as to render impossible their entrance into the productive-amalgamator class.

As the owners of sites would secure an increasing share of m by an increase of population beyond the

economical point, and could apply a large portion of such share, if they so desired, in fostering as productive-amalgamators the continued increase of population and of production, the question arises in what manner, in working out the resultant of the contending forces, would the owners of sites be checked in pursuing to the uttermost their economical advantages. They would, in the first place, be checked by the probable refusal of the owners of free faculties to continuously reduce their remuneration, down to the point of receiving merely sufficient to gratify their impulses for life and for sexuality. The past history of agricultural labourers in England would seem to prove that it is possible to educe a race of such limited aspirations, but it must be remembered that such a race grew up under the inequities of the law of settlement. It is doubtful whether, apart from coercive legislation, the agricultural labourers would have been content with their animal, hopeless existence. We are now arguing on the assumption of the perfect freedom of all forms of capital; the condition of the agricultural labourers, in the eighteenth and early part of the nineteenth centuries, resembled more a state of slavery than of freedom.

With all capitalists unrestrained in our supposed island, the owners of site would, in the second place, find themselves effectively checked in their struggle to reduce x , by the same means as they would be similarly checked under conditions of slavery. At some point in the reduction of k and x , after the economical point was passed, both productive-amalgamators and owners of free faculties would find that they could obtain better return for their capital by transporting it to the nearest unoccupied fertile island. The abstraction

of their capital from the original island would, as under conditions of slavery, at once react on the value of x , as regards the remaining capital, and such reaction would become continuously more powerful. The values of k and x in the newly-inhabited island progressing towards the economical point would, from the causes above mentioned, tend continuously to rise, and would attract to it more and more capitalists (including owners of free faculties), until the values in the two islands approximated. The values would not become quite identical, as there are advantages pertaining to existence in an old settled country which are not reducible to staples, and which would operate to keep the values at somewhat lower figures in the old settled island than in the newly settled. At the commencement of the supposed emigration, there would of necessity be no advantages of site in the newly settled island. The relative shares in m of the productive-amalgamators and of the owners of free faculties would tend to be controlled by the contest in the parent isle, for, if either were being remunerated disproportionately, it would be corrected by the greater flow of that form of capital from the parent isle. Under no circumstances could the remuneration of free faculties fall below the equivalent of staples, which, unaided by other forms of capital, an average man could raise for himself on the most accessible unappropriated lands. But the inventive faculty has so multiplied the possible production per unit of intelligence, that in civilised countries that minimum, which would have been the unit of valuation in the dawn of civilisation, does not enter into practical economics.

Under the supposed circumstances it is probable that, at first, the settlers in the new island would

direct their capital to the production of staples, and that the centre towards which their surplus products would be transported, to be exchanged for non-staples and implements, would still be the manufacturing and residential city in the parent island. Thus the first settled parts would probably be those near the coast, most accessible to such centre. As more capital was attracted or saved, the newly settled island would commence for itself the manufacture of non-staples and implements, at first under the disadvantages of production on a small scale. But ultimately, as population and production increased, the newly settled island would tend to become self-contained; the centre of population would be fixed inland, and the remoteness of the zones of cultivation would in the end be measured from there, instead of from the centre of the parent isle. The effect of the growth of new centres of population has been sketched in our first book (Chapter VI).

Such are the influences acting upon the partition of m among the owners of sites, productive-amalgamators, and owners of free faculties (other forms of capital get remuneration based on the values for the time being of k and x ; this will be demonstrated in the next chapter: we have for the sake of clearness kept them out of the argument in the present chapter). The complications are great in their operation upon the numerous centres of the civilised world, but the values of k and x in all of them are controlled, though for reasons given in the next chapter not exactly fixed, by their values in new countries progressing towards the economical point which correspond to the newly settled island in the foregoing argument. The reward which productive-amalgamators and owners of free faculties

co-operating can obtain in the most accessible unappropriated lands in America or Australia reacts upon the rate of wages and the normal rate of profit in this country.

After the foregoing review of the inter-relations of capital in the supposed island we can now draw certain conclusions as to the theoretical tendencies in free countries.

It will first be convenient to introduce a new term into our verbal currency. As $(k + f + n)$ is partly composed of valuation of faculties consumed and in part of hire-valuation of faculties, and, for the reasons given, the separate parts cannot be distinguished, the term 'normal remuneration' will be adopted to include the aggregate $(k + f + n)$; following the definitions on page 184 the new term will be used to mean 'the valuation for the time being of the temporary use of natural average faculties which induces the propagation of free faculties to the extent of the effective demand.'

With certain modifications and without repetition of the demonstration as regards Prop. 14, we are able to lay down for a state of freedom propositions similar to Nos. 14 and 15, viz.—

Subject only to legal rights *in posse* (which would be controlled as demonstrated in connexion with Prop. 14) the normal valuation of all multipliable products is reducible to terms of normal remuneration of natural average faculties and normal hire-valuation thereon.

The normal remuneration of natural average faculties is reducible to terms of staples.

Applying the demonstration of Prop. 16 to free faculties it follows that the normal remuneration in old and new countries, in all occupations calling for natural

average faculties, is based on, though as will appear in the next chapter not actually fixed by, the share of m (staples) secured by the owners of free faculties on the most costly, i.e., the last settled lands.

We shall best summarise and concentrate the foregoing arguments in relation to free faculties by attempting to answer definitely the second and third questions, laid down for investigation at the commencement of the preceding chapter, viz., (2) What is the proportion borne by the valuation (i.e., the normal valuation) of any form of capital to its hire-valuation? and (3) what determines that proportion?

In Prop. 10 we showed that, subject to temporary fluctuations and to the elimination of elements ordinarily included in hire-valuation but not forming part thereof, there was for the time being one common rate of normal hire-valuation for all capital. Our first inquiry can then be put in the general terms—What is the proportion borne for the time being by the normal valuation of capital to normal hire-valuation? It will be convenient to express the answer in the first place algebraically.

As stated above the problem finds its ultimate solution on the most accessible unappropriated lands, which is the same (while any lands are unappropriated) as the most costly lands necessary to supply the effective demand for staples, and all the productive-amalgamators' capital consumed or hired on such lands would be reducible to terms of $k + f + n$ (normal remuneration of free faculties) augmented by normal hire-valuation.

Let us suppose that the capital of the productive-amalgamator, co-operating on such lands with o men, represents (inclusive of normal hire-valuation of such capital during construction), when reduced to terms of

faculties, the work of p men for an average of one year,¹ and that $\frac{1}{q}$ of such capital is consumed (by wear, tear, &c.), in one year's work on such lands, in conjunction with o . The total capital of the productive-amalgamator would thus be $p(k + f + n)$ and the portion consumed would be $\frac{p}{q}(k + f + n)$. The first deductions to be made from m would therefore be—

Normal remuneration of free faculties		Productive-amalgamators' capital consumed
$o(k + f + n)$	+	$\frac{p}{q}(k + f + n)$

and the remainder divided by $p(k + f + n)$ is the fraction representing x . The equation would read—

$$x = \frac{m - o(k + f + n) - \frac{p}{q}(k + f + n)}{p(k + f + n)}$$

It is difficult to express this in ordinary language; the following is an attempt.

The proportion borne by the normal valuation of capital to normal annual hire-valuation is worked out on the annual production of staples on the most accessible unappropriated lands required to meet the effective

¹ This involves the assumption, which has not been strictly proved, that the normal hire-valuation entering into the productive-amalgamator's capital can be expressed in terms of faculties or staples; as such hire-valuation is merely an accretion to the normal valuation of such capital it follows that it can be expressed in the same terms. The productive-amalgamator's capital is an entity into which x has entered; not necessarily x of the same value as the x in course of determination by the production of the particular m entering into the above equation, but an x previously determined and a known quantity. The x we are seeking does not therefore enter into the valuation of the co-operative productive-amalgamator's capital, but one which the new x will either confirm or tend to vary.

demand for staples, and is represented by a fraction of which the numerator is the gross production, less the equivalent in staples, of the normal remuneration of free faculties used and of the normal valuation of productive-amalgamators' capital consumed in such production; and the denominator is the normal valuation in staples of the productive-amalgamators' capital applied to such production.

The second inquiry—What determines that proportion?—is in effect, what determines the value of n ? The results of our investigation in this chapter are that the stable point is determined by the conditions under which the owners of free faculties will, from time to time, be willing to propagate to supply the effective demand for free faculties, and that there will be temporary fluctuations above or below that point, reflecting the temporary deficiency or excess in the supply of free faculties to meet such effective demand. If the population had grown in advance of the necessary co-operative capital, *ceteris paribus*, n would fall, and the fraction indicating the value of x , as above, would rise; if such co-operative capital had outrun the population, n would rise and the value of x would fall.

In so far as n is represented by abstention from labour it would, in relation to the above fraction determining the value of x , tend to increase the equivalent in staples of $p(k + f + n)$ and $\frac{p}{q}(k + f + n)$, and also either to diminish m or to increase o , according as the productive-amalgamator found it more advantageous to obtain a smaller gross product, or to make up for such abstention (i.e., short working hours) by employing more units of faculties; but the equation holds good in either case.

CHAPTER VIII

VALUATIONS (*continued*)

WE are now in a position to investigate the relative normal valuations of such of the several forms of capital as are susceptible thereof, and to examine the causes affecting the market valuations of capital not susceptible of normal valuation.

Before pursuing our inquiries it will be well to correct a possible wrong impression to which our argument in the last chapter might lead. We have spoken of the owners of free faculties sharing in m , the product resulting from the amalgamation of their capital with that of the productive-amalgamator. In effect, under the institutions of private property and free exchange, where the functions of a productive-amalgamator are required, the owners of free faculties do not share in m ordinarily, and have no claim upon it. The average amount of m controls, as we have seen, the values of k , f , and n , which are the factors entering into normal remuneration, but the owners of free faculties are remunerated out of the productive-amalgamator's capital. They have no claim upon the particular m resulting from the hire of their faculties by the productive-amalgamator, any more than has the maker of the plough who has been duly paid for his implement by the productive-amalgamator. To have introduced this distinction into the last chapter would

have needlessly complicated our argument. It is, however, necessary to mark the distinction emphatically, as the loose language of some writers has apparently led working men to think that they are entitled to share in the products which their faculties have aided to educe, notwithstanding that they have previously been paid the market rate of remuneration for the use of such faculties.

In the last chapter we have established that the unit of normal valuation, where slavery is non-existent, is the normal remuneration of average faculties, which is the equivalent of a certain proportion of the average quantity of staples that can be raised, in the state of knowledge for the time being, on the least accessible land which, in the degree of density of population existing from time to time, is required to be cultivated to satisfy the effective demand for staples. The normal valuation of staples and such normal remuneration ultimately measure each other, i.e., normal remuneration is expressible in its simplest terms in staples, and the normal valuation of staples (in common with all other capital susceptible of normal valuation) is measured by normal remuneration augmented by normal hire-valuation.

The proportion borne by normal hire-valuation to normal valuation, under the supposed conditions, we further found would be worked out on the same lands and (to express it in alternative terms to those of the last chapter) would be the ratio, under the conditions of knowledge and population existing for the time being, between the surplus production on such lands (remaining after deducting the equivalent in staples of the normal remuneration of average faculties directly used and of the normal valuation of other capital dissolved in such production) and

the normal valuation in staples of the several capitals (other than the average faculties directly used) necessary to such production.

The conclusions in the preceding chapter are supposed to be worked out on a free self-contained island, with adjacent islands available for emigration. Such conclusions could only be applied to Cosmopolitan Economics if the conditions corresponded with those of the hypothetical island, or, in other words, if the average faculties of all races in the whole world were of equal utility in production, if all races would propagate only under similar conditions, and if all could readily emigrate from any one part of the world to another. These conditions we know do not obtain, and therefore our conclusions, like all other principles of Natural and Cosmopolitan Economy, can only be predicated as tendencies. In these days of ready transport and international relations the whole civilised world is tending towards assimilation as one community, but there are still many causes in operation preventing the cosmopolitan application of the conclusions drawn in the last chapter, and some of these we shall have to consider in this chapter.

We will now proceed to analyse the normal valuation or the market valuation of the several forms of capital, under conditions in which slavery is non-existent, and it will be convenient to commence with Classes 5, 6, and 7 (see page 112), being the three forms of human faculties.

CLASS 5. *Average Human Faculties.* Having investigated in the last chapter the general laws controlling the normal remuneration of this class of capital, we have now to consider the causes modifying or impeding their universal application. Such laws would be of

universal application manifestly if the particles were liquid and maintained their own level, so that a variation of level in one place was immediately corrected by an inflow from or outflow to the surrounding areas ; or, in terms directly applicable, if any average faculties remunerated on a lower scale than others could immediately transport themselves to the place of higher remuneration. Our inquiry, therefore, resolves itself into a determination of the causes impeding the free competition of average faculties *inter se* ; of such causes the following are the principal :—

1. *Differences of Race.* These have developed over past ages, when the difficulties of migration for owners of average faculties only were almost insuperable ; it is unlikely that, under conditions corresponding to the present state of knowledge, such marked differences would have arisen. As the human race spread over the globe in the agricultural stage of civilisation and settled in diverse parts thereof, the descendants of such settlers succumbed to the law of conformation to environment, and differences of climate and of fertility brought about differences in race and habits, which render unnatural and difficult a removal to a new environment. It is beyond the scope of this work to trace historically the growth of such differences, and we are only concerned to indicate their existence.
2. *Differences of Language.* These, like the foregoing, have resulted from the difficulties of intercommunication in the past, and constitute a distinct cause impeding the natural tendency to equality of remuneration ; the inconveniences,

which result from obstacles to free converse with employers and fellow-workers, are such as to outweigh generally the greater physical comforts, which might be obtained from migration.

3. *Localism*. In this term we wish to include all those complicated sentiments such as force of habits, love of country, of districts, of birth-place, &c., which constitute a sort of *vis inertia* to be overcome, before free faculties will migrate from their own country, or even from one part to another of the same country. Many owners of free faculties in this country are content to remain here with lower remuneration than they could obtain in the Colonies or in the United States, though, as regards those countries, the preceding two causes do not exist. Under this head we also include the effect of diversity of religion, tending to keep free faculties in the country where their particular creed predominates.
4. *Political regulations*. These include such regulations as the military laws in operation on the European Continent. The liability to be recalled for military service, involving the probable sacrifice of capital acquired in a foreign country, coacts with the preceding causes to impede emigration.

The above are illustrative only of the principal causes in operation, and must not be regarded as an exhaustive catalogue. These and the like causes, acting over long ages, have resulted in the following economical effects:—

- (a) Differences in the quantity and kind of staples

and of non-staples, with which the several races are content to exist and propagate. These variations we have already indicated. The conditions, as regards remuneration, with which a Hindoo or a Chinaman would be content, could not be offered to a European. The effect is traceable in a minor degree in the same community; the conditions, for example, under which labourers in Ireland and the Highlands of Scotland exist and propagate, differ considerably from those obtaining in many parts of England.

- (b) Differences in the relative efficiency of average faculties in different countries and districts. To some extent this variation and the foregoing are doubtless intermixed as cause and effect. In comparing countries so adjacent as England and France, the higher efficiency of the navy in England is well known; on the other hand, the remuneration in staples of the English navvies is considerably higher than that of the corresponding class in France. The variations are still more marked between the energetic Teutonic races of Europe and the comparatively feeble and slothful races of the tropics. The requirements of the former in staples, if reduced to a common measure of valuation (such as price), exceeds several times that of the latter, but their faculties, both intellectual and physical, are correspondingly of a much higher order.

The ultimate result of these differences has been that the several countries have separate, and in some cases greatly differing, standards of average efficiency of faculties and of normal remuneration thereof, and

within the same country there are similar though minor differences between the several districts. There is a tendency for these standards to assimilate by reason of increased facilities of transport and of international trade; the several districts within a country may, as regards the standards of normal remuneration, be regarded as separated inland lakes of slightly varying levels, with communication more or less restricted with each other, and with a great central ocean of international trade communicating with similar inland lakes of other countries.

In most civilised countries the nature of average faculties has been altered by means of compulsory education. They are no longer the faculties of an ignorant man, but of a man who has received a primary education. The immediate effect of this is an economic loss (see First Book, page 39), and it is doubtful whether an average labourer, who has imbibed the elements of education but who is otherwise unskilled, aids production more than an average man of the same class who is ignorant. Indirectly, however, by facilitating the acquisition by suitable individuals of further knowledge useful in production, and by stimulating the inventive faculty, compulsory education is without doubt an economic gain.

In relation to the rate of normal remuneration of average faculties in a country such as England at the present day, it is necessary to remember that the most costly lands on which such rate would be worked out are not within the country but abroad in America, Canada, or Australia, and that, for the reasons indicated above, the rate of normal remuneration would probably be less here, than in the country where such most costly lands were situate. The equation shown

on page 240 would in such case have to be modified, by giving such a value to $k + f + n$ in relation to o as would represent such difference in the rate of normal remuneration. Another important fact to be noted is that the causes discussed in this and the preceding chapter tend to fix the rate of normal remuneration for the time being only—not permanently. Such rate is subject to continual movement, upwards principally by reason of the operations of the inventive faculty, downwards principally by reason of the disproportionate gratification of the sexual impulse when the economical point is passed. This fact has, we think, been made clear in the foregoing reasoning, but it is advisable to emphasise it here, before passing on to consider the valuations of other forms of capital, which are mainly built upon the unit of average faculties.

The inception of a buyer's valuation, which is the characteristic of capital (see page 105), is, as we have already stated, the fact that the human race, in common with all forms of animal life, seeks to satisfy its wants with a minimum of personal exertion, and necessarily the amount of such valuation varies directly with the amount of personal exertion saved. The units or elements of normal valuation we find are normal remuneration of average faculties and normal hire-valuation. We are therefore enabled to state the final elements in a free community of the normal valuation of multipliable products and of the capital employed in their production, which are the only forms of capital susceptible of normal valuation.

The normal valuation of multipliable products, like that of staples, is determined by the most costly

portion of such multipliable product required to be produced to meet the effective demand; and the advantages of site in the production of the less costly portions constitute capital. The normal valuations of the products and of such advantages are both controlled by the same law, but it is difficult to embrace them in the same definition, so we will separate them.

The normal valuation of a multipliable product is equal to the aggregate of the units of normal remuneration amalgamated, or otherwise dissolved, in the evolution of the most costly portion of such product necessary to meet the effective demand for direct consumption of the product, or of the several complete products into which it enters, plus normal hire-valuation on the units of capital employed in its production.

The normal hire-valuation of an advantage of site in production of multipliable products is equal to the aggregate of the units of normal remuneration saved in the evolution of products by the use thereof, as compared with the evolution of the most costly portion of similar products necessary to meet the effective demand for direct consumption thereof, or of the several complete products into which they enter, plus normal hire-valuation during production on such saved units. The normal valuation of such advantage is determinable from such normal hire-valuation by the laws controlling the proportion borne by normal hire-valuation to normal valuation.

The foregoing definitions are in effect restatements of Props. 11-14, by the light of the result of our search after the units of valuation in a community where human faculties can only be hired, not sold; the

terms are sufficiently wide to include complete and incomplete products. We will now continue our inquiry into the valuation of the several classes of capital.

CLASS 6. *Acquired Superiorities of Capital.* This is an extensive and diverse form of capital, and includes all the mental and physical skill which, by education or training, can be impressed in ordinary human faculties. It thus includes what is called the skilled labour of the artisan at the one end, and the professional skill of the barrister, the physician, and the civil engineer at the other. It does not include the extraordinary skill and ability which is innate in some gifted individuals, but only such skill as can be acquired by a man of average faculties, instructed by men possessing only such skill and knowledge as can be absorbed by average faculties. This class of capital is, therefore, a multipliable product, and its normal valuation—if it were susceptible thereof, which, in a free country it is not—would be determined on the principle stated above. The normal rate of remuneration of the acquired talents of a technic-amalgamator would obviously be the normal remuneration of average faculties, plus normal hire-valuation and depreciation on the units of normal remuneration amalgamated or otherwise dissolved in the acquisition of such superiorities; but his market rate of remuneration differs considerably from such normal rate.

The normal rates of remuneration, and the deviation therefrom of the market rates of remuneration, of the several kinds of acquired superiorities of faculties vary greatly. The causes of such variation in the respective normal rates of remunerations are principally the following:—

1. The quantum of the several capitals actually

amalgamated in acquiring the various superiorities differs greatly. Some artisans and domestic servants, as stated in our first book, can be trained by merely watching, assisting, and imitating the skilled workman engaged in production. The powers of production of the instructor are not thereby retarded, and the only units of capital absorbed in the acquisition of such superiorities are the equivalent of the capital, which the learner would have produced if his faculties had been applied as unskilled labour.

On the other hand the engineer, the barrister, the physician require years of training, frequently under men of great attainments acquired at great cost, who are often entirely withheld for the purpose from material production. This point has already been sufficiently explained in our first book.

2. The quantum of capitals otherwise dissolved in the production of the different kinds of superiorities also varies greatly. The causes of such variations have already been indicated in our chapter on Dissolution. The element of risk is thus an important one in the production of the higher technic-amalgamators, and by the principles upon which the pig-iron producer provides for his bad debts (see page 123), the remuneration of the faculties of a technic-amalgamator should include, not only normal hire-valuation and depreciation on the capital actually amalgamated in his personal training, but also normal hire-valuation on the proportion of losses, by deaths, disease, and failures, in educating and

training all students for the like profession. The element of danger in the exercise of any trade or profession when acquired should also enter into the remuneration of a technic-amalgamator's services; the remuneration should be such as to replace the total capital amalgamated or otherwise dissolved, with normal hire-valuation thereon, within the average period of utile existence in the particular trade or profession, having regard to the element of danger.

The causes in operation tending to deviations of market remuneration from normal remuneration are principally the following, one tending to force market remuneration below and the other to raise it above normal remuneration :—

1. The rewards to some successful technic-amalgamators include some immaterialities not reducible to valuation. Of these, social position and influence are the most important, and are most effective in old countries. The social possibilities of successful barristers, physicians, clergymen, &c., are such as to induce a constant supply up to the effective demand of the necessary acquired superiorities, at rates of remuneration which in the aggregate repay only a fraction of the capital amalgamated and otherwise dissolved, in so keeping up the required supply in such several professions.
2. The several rates of market remuneration tend to rise above the rates of normal remuneration in this class of capital, in consequence of the restrictions and regulations enforced to that end by the several professions and trades. Examples of such restrictions and regulations

are the etiquette of the Bar, the limitations on the number of articled clerks of solicitors and other professional men, trades-union rules regarding apprentices, rates of pay, restraints on production, &c. Restrictions on the practice of certain professions are defensible economically, so far as they tend to insure that the practitioner possesses the acquirable superiorities which he professes. If a man, for example, suffer from bodily illness, he cannot himself test a medical man's knowledge, and it is for the advantage of the community that such knowledge be tested and certified beforehand. Restrictions, however, which tend to limit the number of practitioners, by placing difficulties in the way of the acquisition and certification of the skill necessary for the exercise of any trade or profession, are to the disadvantage of the community. Still more to its disadvantage are the regulations limiting production by the bricklayers' and other trades unions.

All capitalists in this class, from the artisan to the barrister, are technic-amalgamators within our definition, but in most communities an ill-defined line is drawn between technic-amalgamators who are ranked with what is called 'labour,' and those above who are supposed to be in the ranks of and in sympathy with 'capital.' And the interests of all technic-amalgamators on the 'labour' side have been considered identical, and in direct opposition to the interests of 'capital.' This is obviously an erroneous view: if a trades union succeed in raising the remuneration of its members above the natural rate, it does so at the expense, not of any one class of capital, but of all capital, including

the poor owner of average faculties only, and the artisans in every other trade; as an illustration of this we may safely assert that every labourer and artisan in this country is housed worse than he ought to be, in consequence of the unfair rate of remuneration enforced by the unions connected with the building trade.

CLASS 7. *Innate Superiorities of Faculties.* These have no normal remunerations; they are susceptible only of market valuation, dependent upon the competition of intending investors. The most prominent types are the superiorities of great artists, poets, barristers, surgeons, and other men of genius or of exceptional natural powers. Such superiorities are not multipliable, but the demand for them must pre-exist their acquisition of value. In a barbarous country the genius of a Turner or a Millais would be valueless, and the innate faculties of poets and men of letters would find no market in an ignorant community. Further, as previously noted, in a community where surplus products were equally divided, the market valuation of works of art would probably be on a lower scale than in our state of unequal division. An equal division of products would probably increase the quantity of art products, but would lower the quality, as only such works of art as came within the purchasing power of men of moderate means could be acquired, except by the State or by municipalities. No individual could adequately remunerate the man of genius who spent years of patient toil to the training and development of his exceptional powers.

We now take up the consideration of the valuation of forms of capital other than human faculties.

consumed. If both breweries supplied the same market, and one of them was situated more favourably than the other in relation to such market, so that less capital was required to transport the ale when produced, that saving also would enter into the calculation as to which, if either, brewery had an advantage of site.

The extent of the effective demand is with this class of capital, as with moveable multipliable objects, the dominating factor of value. The demand must be such as to necessitate resort to less favourable sites, otherwise there can be no advantage. The normal valuation of an advantage of site will therefore tend to increase or decrease with the demand, but the inventive faculty is ever at work as a counteracting tendency, discovering new and less costly methods or sources of supply, which may diminish or dissolve an advantage, and this element of risk tends to diminish its normal valuation.

Under this class of capital falls also the high valuations attained by commercial sites in cities and towns, but there are some special characteristics to be noted. As stated above, the process of production is not completed until the complete product is transported to where it is consumed. The great saving resulting from division of employment, and its concomitant, intensity of production, has been noted in our first book (Chapter VI). Such division involves the congregation in or near one spot of the various complete products constituting staples and the principal non-staples, for, if every consumer had to seek for such products in the places where the amalgamating processes prior to final transportation were carried on, a great portion of the economies resulting from division of employments would be lost. If, for example, every one in this

country who wanted cotton goods had to go to Manchester for them, to Leeds for woollen goods, to Rochdale for flannel, it would probably be found cheaper for each consumer to spin and weave for himself. Hence has resulted the establishment of centres of exchange, market towns in agricultural districts and particular streets in large towns. It would be difficult to analyse the causes which have determined the sites of such centres. Sometimes the selection seems almost arbitrary, but it appears necessary that the site should be a convenient centre accessible from any part of the appendent district. The distinction between these and the other advantages of site, such as those pertaining to the brewery to which we have referred above, is that the latter are concerned with the saving in connexion with some one or a small number of products, whereas these are concerned with the saving in connexion with practically all complete and many incomplete products. Thus a farmer, let us say, wants groceries, meat, wearing apparel, boots, &c. If there be no convenient centre where he can get them, he must expend a considerable capital in sending round to the various productive-amalgamators; it will therefore save his capital to pay a higher price for them at some common centre, where he can get them all with one journey. This higher price is the basis of the rent paid for commercial sites. The valuation of the advantages depends, as stated above, upon the effective demand for the complete products into the distribution of which the site enters, and in our supposed market town it would therefore depend principally upon the demand for all complete products directly consumed in the appendent district. This necessarily implies that the normal valuation of such sites will

be more or less in proportion to the numbers of the appendent population and to the quantity of surplus products falling to the share of such population. But the owners of the sites cannot exact as rent the whole saving involved by the whole population so resorting to a common centre of exchange. The land occupied by such towns is of limited extent; the shops are generally in the High Street but, if the rents exacted there were too high, shops would be opened on the confines of the town, and the disadvantage of driving round the town for the purpose of purchasing requirements, compared with shopping in the High Street, would not be great. If, for example, a baker sought to lease the site for a shop in the main street, and the landlord insisted on a rent which necessitated the baker doubling the ordinary price of bread, it would probably be found that the landlord overvalued the advantage of site, for consumers would be willing to walk to another site, say one hundred yards away, to save the extra price involved by the landlord's valuation. On similar principles are determined the rents of the great business thoroughfares of London and other large cities, the rent rising in proportion to the number of the appendent population and its spending power, i.e., share of surplus products. In capital of this class the calculation is usually made not from normal valuation to normal hire-valuation but conversely. It would be difficult to value accurately such advantages of site, but the hire-valuation is first determined by the competition among those who seek to acquire them; the landlord usually raises his rents until he finds that some of his tenants cannot afford to pay his demands, and, if he cannot get other tenants at the higher rate to replace

those quitting, he finds that he has overvalued the hire-valuation of the advantage and must reduce it accordingly. The hire-valuation being thus determined and the normal ratio of valuation to hire-valuation known, the normal valuation for absolute transfer is calculated therefrom.

Another kind of advantage of site arises in connexion with sites required in large cities for domiciles for owners of natural faculties only and for the operative owners of acquired superiorities; where available sites near the productive-amalgamator's factory are scarce, such sites would represent the advantage gained in time by the labourer or operative being near his work, instead of having to expend time (i.e., potential faculties) in passing to and fro.

Advantage of site is the form of capital of which the hire-valuation constitutes the rent of land for agricultural purposes; its exceptional power of absorption of surplus products has been analysed in the last chapter. With the existing density of population, agriculture has in many old countries become allied to a manufacturing process, but one in which the extent of site required is very great in comparison with other processes of production. The constituents of the soil (replenishing objects) are abstracted in advance of the natural powers of recuperation, and are replaced and supplemented by fertilising products; and the same site, which without such fertilisers would produce only ten bushels of wheat annually, is made to yield thirty bushels. The valuation of this sort of advantage is affected by two causes, the proximity of the fertilising products, and the proximity of the market for the agricultural

produce. Climate also enters into advantages of site in relation to agriculture.

Advantages of site connected with direct consumption have no normal valuation; they are susceptible only of market valuation dependent upon the competition of intending investors. This sub-class of capital is analogous to singular objects; characteristic types of it are sites suitable for houses in fashionable streets or watering-places. The high valuation of such sites, like that of a work of an artistic genius or of a unique diamond, is due mainly to the disproportionate division of surplus products, as the only means by which the moneyed classes can effectively separate themselves from those below is by outbidding them for such fashionable sites.

We have included above, for the reasons stated, the sites of labourers' houses as advantages connected with production. Strictly, they are for direct consumption by the labourers, but, in view of the reasons which must determine their selection, they may be deemed capable of normal valuation, which this sub-class is not. There is a gradation from the most aristocratic sites at one end, through sites suitable for the various sections of the upper and middle classes, down to the sites of labourers' cottages at the other end. As we ascend from the latter, the sites assume gradually the characteristics of advantages of site for direct consumption, but we are unable to draw logically a line between the two sub-classes.

Other distinctive features of advantages of site fall more conveniently for consideration in connexion with the next class of capital.

CLASS 4. *Fixed Objects acted upon by Processes of*

Production. This class necessarily divides itself into two sub-classes, corresponding with those noted in the preceding class, viz., sites or fixed objects acted upon by processes of production, for the purpose of, or connected with, production of multipliable products, and (2) sites or fixed objects so acted upon for the purpose of, or connected with, direct consumption. The first sub-class is obviously an amalgamation of several kinds of capital, the normal valuation of which we have investigated, viz., advantages of site, average human faculties (the work of the labourers in construction), acquired superiorities of faculties (those of the architect, managers, foremen, &c.), and multipliable products (the materials of construction). The normal valuation of this sub-class is therefore the sum of the normal valuations of its constituents, *plus* normal hire-valuation during the period of construction. The element of insurance against dissolution otherwise than by consumption also enters into such normal valuation, but not so largely as into that of moveable multipliable products, as so many of the risks which the latter run do not touch the site. If, however, the particular finished product, whose production gives the site its value, be one the demand for which is fitful or uncertain, the element of insurance enters reflectively into the normal valuation of all the capital amalgamated with the advantage of site. This is illustrated typically in new countries, such as America and Australia, where in mining districts mushroom towns spring up and flourish for a time and then may be deserted. In such a town there is not the same stability in an advantage of site, as in a like advantage in an old settled country like England. Let us suppose a waterfall, available for grinding wheat for the new town, if the necessary

capital to erect a mill be amalgamated therewith. To trace the working of the principle of insurance in such case, we must suppose a productive-amalgamator engaged in erecting such mills in a number of such towns, and then selling them. The normal valuation of each would be much more than the normal valuation of the site, *plus* that of the capital amalgamated or otherwise dissolved in the erection, *plus* normal hire-valuation, because in some cases the productive-amalgamator would be overtaken by the desertion of the towns before he had finished or disposed of the mills, and the normal valuation of the whole would have to include sufficient excess to recoup the losses caused by such desertion.

Sites or fixed objects acted upon by processes of production for the purpose of, or connected with, direct consumption have no normal valuation, but it is generally possible to separate the valuation of the site from that of the capital amalgamated therewith, and the latter has its normal valuation compounded of its several constituents. The sites of residences, for example, at seaside or inland health resorts have definite market valuations as such sites, before the product is completed by the erection of residences. This kind of capital in its characteristics lies midway between singular objects and multipliable objects. No two sites are identical, and therefore in strictness each one is a singular object, but a great number of them are very similar, and to some extent compete with each other, whereby a subordinate principle of valuation *inter se* is established. In this way all the sites forming what is considered the best part at a seaside resort will have a common basis of valuation of so much per foot; then the less favourable sites will

have valuations per foot, diminishing proportionately to their distance from the best sites. Thus, the valuation of the site being definite, the house erected upon it gives a definite increase to the valuation, such increase being determined by the ordinary principles by which normal valuations are fixed. The site, under leasehold tenure, often remains the capital of one man, while the amalgamated capital is for a long term of years the property of another, but in such cases the valuation becomes complicated by variations in the market valuations of the site, as the owner of the site generally receives the same amount for hire-valuation for each year of the whole term, whether or not the market valuation varies during the term. This makes his capital therein during the term more in the nature of a legal right than of an advantage of site, and, if during the term the market valuation of the site increases, the leaseholder thereby acquires a capital in the site. The question of insurance enters largely into the valuation of capital amalgamated with this class of site. The impulses whose gratification imparts value to such sites are fickle and uncertain. A fashionable district in a city may be invaded by the outgrowth of the producing population; a health resort may lose popular favour. Thus the productive-amalgamator who builds the house will, if he sell it when complete, require something for insurance, and the investor, in fixing the hire-valuation should he lease it, will similarly add something to the normal rate of hire-valuation for insurance.

CLASS 8. *Legal Rights* in esse. This form of capital, as stated in the first chapter of this book (page 111), is an immaterial creation of human law; it is a right existent in one or more individuals, to enforce delivery of certain

capital to him or them by another individual or other individuals. The basis of its normal-valuation is, therefore, the valuation of the capital which is the subject of the right. But two contingencies may reduce the valuation of the right below that of the capital in possession. First, the law in the district where the right is enforceable may not be so paramount as to make certain the delivery of the capital. Secondly, the individual or individuals, against whom the right exists, may not possess the necessary capital or the means of acquiring it, wherewith to satisfy the liability. In ascertaining the normal valuation of a legal right subject to either of these risks a deduction to cover the average loss in realising similar rights would be necessary. Where no risk exists no deduction is required; a Bank of England note, for example, is only a legal right *in esse* against the Bank of England, but, as previously stated, it has the same valuation as the capital which it represents; a cheque signed by Rothschilds would similarly be treated in all exchanges as of equivalent value to the gold in possession. A debt payable by some one resident in Venezuela or the newly settled parts of America or Australia would probably not exchange at a valuation, equivalent to the amount of such debt in possession.

CLASS 9. *Legal Rights in posse.* The normal valuation of this class of capital is equal to the discounted valuation of the capital (estimated or ascertained) claimable under the right, less any deduction necessary by way of insurance. This form of capital is also an immaterial creation of human law, and, as such, is subject to the two contingencies affecting the preceding class of capital. But it includes some forms of capital which are subject to other contingencies; it

embraces everything which there is any existent ground for believing may at some future time mature into a legal right *in esse*. It thus comprehends matters ranging from a right to an English Government annuity on the one hand, to an expectation under a will of a living person, or the possible royalties from an undeveloped patent on the other. The normal valuation of a right to a future payment by our Government would be subject only to deduction, at the normal rate of hire-valuation, to reduce to discounted valuation. The valuation of an expectancy or of an undeveloped patent is subject to provision, not only for hire-valuation, but also for the risks mentioned above and for others much greater. Between these extreme types lie a vast number of legal rights *in posse*, into the normal valuation of which the element of insurance against risk enters in varying degrees.

CLASS 10. *Alienable Reputations*. The normal valuation of this class of capital is equal to the discounted valuation (at the rate of normal hire-valuation) of the capital estimated to be gained thereby, less deductions necessary by way of insurance. The principle of valuation is the same as that which applies to legal rights *in posse*, and the element of insurance against risk enters into the valuation in varying degrees. As noted, in the classification of capital in the first chapter of this book, alienable reputations are of two kinds, those adherent to persons and those adherent to places. The goodwill of an ordinary business, either professional or commercial, is a type of the first kind; it is found that the reputation for good work or professional skill acquired by individuals can be, in many cases, transferred to their successors. But the vagaries of custom in this respect are curious. The two branches of

the legal profession, for example, solicitors and barristers, are closely allied; to a solicitor's business adheres an alienable reputation, which can be transferred at a higher price in proportion to its income-earning power than almost any other; a barrister's connexion is purely personal, and never acquires an alienable reputation. Similar contradictions exist in the medical profession as regards general practitioners, physicians, and specialists. As stated above, the valuation of an alienable reputation is based on an estimate of what can be gained thereby; in purchasing a solicitor's business, for example, the intending investor will consider what he can earn with his acquired skill by practising without an established *clientèle*, and will base his offer on the estimated advantage only of taking to, instead of building up, a connexion; in purchasing a manufacturing business, similarly, the intending investor will estimate only the advantage to be gained thereby, over starting a new business. The element of insurance enters in widely varying degrees into the several kinds of businesses. The valuation is generally expressed as so many years' purchase of the average profits, after deducting ordinary interest on the amount of capital invested in the business; and so various are alienable reputations, that the scales for different businesses vary from half a year's to ten years' purchase of such profits.

Alienable reputations attached to places become intermixed with advantages of site. A landlord cannot ordinarily exact varying rates of rent for similar and adjoining sites. If two sites of equal extent, for example, are situated in equally favourable parts in the same street, he will usually only get the same rent from each, though one be let to a grocer and the other

to a butcher, and the latter make twice the profit of the former. The reputation in these cases is personal, and if the butcher move to a neighbouring shop he can take his reputation with him. But in some businesses the reputation adheres to the place, not the person: this is specially noticeable with places of refreshment, inns, public-houses, restaurants. The goodwill in such cases adheres to the site, and, if the tenant leave the site, he has to abandon the goodwill. In such case the owner of the site acquires, in addition to the normal valuation of the advantage of site rateably with the sites adjoining, an alienable reputation, which enables him to exact a higher rent for that special site utilised for that particular trade. This extra payment is intermixed with ordinary rent, but is distinguishable from it.

It is convenient here to determine the position of women in an economical system based on private property and exchange, where slavery is not permitted. In most civilised countries women now have legal rights equal to those of men, and equally with men can acquire and retain any form of capital. They can also equally with men bequeath capital, other than such as expires with them, i.e., other than natural faculties and acquired and innate superiorities. Regarding the natural average faculties of a man, whether purchaseable or only hireable, as the unit of capital, there are two important facts bearing on the economical position of women.

1. The buyer's valuation of the natural average faculties of women, for utilisation in the production of staples and of material non-staples, is less than that of the natural

average faculties of men. We are not here concerned with the causes of this difference, with its abstract justice or injustice, or with the possibility of removing it, but only with the fact of its existence. The inferiorities which induce the difference are deemed to be both physical and mental, and thus, in relation to production of staples and material non-staples, the remuneration of women *per diem* for the same class of work is almost invariably less than that of men. In fixing the place of women in cosmopolitan economy under the conditions generally existing in civilised communities, if we treat the average man as possessing innately the unit of capital, we must regard the average woman as similarly possessing innately in relation to material production, a certain fraction of such unit. Their position is analogous to that of a man of inferior race working in a community possessing superior natural faculties, e.g., a negro in the United States of America, where the buyer's hire-valuation of a black's average faculties is considerably less than that of the unit white man's faculties. There are, of course, women and negroes with innate superiorities of faculties, and they can also acquire superiorities, which may place them on a level, as regards hire-valuation, with white men possessing similar superiorities.

2. As ministers to and partners in the gratification of the second dominating impulse (First Book, page 88) women possess what we must regard economically as capital of a distinct

class. By marriage, or in less reputable ways, men will part with capital of high valuation, in order to acquire a partner in the gratification of this impulse. Two effects on the economical position of women result from this fact; the 'capital' of their feminine attractions may be exchanged for the means of livelihood in varying degrees of luxury, as wives or otherwise, and so relieve them from the burden of daily toil in material production; on the other hand, the possession of such 'capital' tends to further reduce the market hire-valuation of their faculties utilised in the production of staples and material non-staples; this tendency is seen at its worst in certain continental cities, where the wage of a work-girl is reduced to a point at which it is practically impossible that she can live virtuously, as it is expected that she will supplement her income by becoming mistress to some man. The subject is not a pleasant one, and we will not pursue it; this short reference was necessary to define the economical status of women.

CHAPTER IX

MONEY

MONEY, 'the medium of exchange,' is subject to some special influences in regard to value. These, while not resulting in exceptions to the principles of valuation laid down in the preceding chapters, are the causes of frequent variations of its market valuation from its normal valuation, and of its market hire-valuation from the rate of normal hire-valuation.

The requirements of exchange and the financial exigencies of communities have resulted in the establishment of three kinds of money, which we will distinguish by the terms Intrinsic Money, Symbolic Money, and Evidential Money; we will first investigate the characteristics of these separately, and afterwards some special characteristics of all money.

Intrinsic Money is a multipliable moveable product falling under Class 2 of capital. Its normal valuation, like that of other forms of capital, is reducible to normal remuneration of natural average faculties and normal hire-valuation thereon, and is determined on the same principles as that of every other multipliable moveable product. The supplies of it cannot be increased over any prolonged period, except by an amalgamation of other capital equal on the average, with the augment of normal hire-valuation, to the normal valuation of the money or product obtained

thereby; hence its intrinsic character. In different communities at different periods various products have been selected as the intrinsic medium of exchange, but, as in this book we are concerned not with the history of economics but only with the present-day phenomena, we shall confine our investigations to the forms of intrinsic money, gold and silver, which have been almost universally adopted by civilised communities.

There is a dual demand for these metals—for use in the Arts and as money—and a final dissolution, by attrition, accidents, &c., of money and other products fashioned thereout. But their durability is greater than those of most other products; on reference to the various forms of dissolution set forth in Chapter III, it will be recognised that gold and silver products are immune from many thereof. The productive-amalgamators who evolve gold and silver have one great advantage over other productive-amalgamators, they have not to sell their product but (in a gold standard or silver standard country respectively) have got their capital in the form desired by all productive-amalgamators, as the ultimate result of their amalgamations; and, if there be any over-production of gold or silver, the resulting depreciation does not fall, as with other products, on the particular productive-amalgamators who have miscalculated, but is shared and borne by the owners, actual and potential, of that kind of bullion all over the world. This advantage, and the exceptional gains sometimes resulting, keeps production at a very high level, and there can be no doubt that many of the amalgamations of capital concerned with gold and silver mining are not remunerative, i.e., do not restore the capital amalgamated, with normal hire-valuation thereon. The inventive faculty is, however,

continually directed to increasing and facilitating the production of these metals, and there is a tendency for them to be produced with continuously reducing expenditure of capital reduced to terms of normal remuneration of average faculties. This cause appears in the past to have more than counteracted the natural tendency of irreplaceable objects to increased cost (see diagram, First Book), and, by comparison of valuations of the present with remote periods, it is obvious that gold and silver have had a continuous tendency to become 'cheaper,' i.e., to be worth less in terms of normal remuneration. For reasons to be presently mentioned, this tendency is not noticeable from year to year, but it is obvious if a comparison be made of the wages of unskilled labour at distant periods.

Symbolic Money is a legal right *in esse*, falling under Class 8 of capital, and acquires its valuation, wholly or in part, not from its cost of production but from the force of law; the principal examples are inconvertible paper money, and silver, copper, and nickel coinage in this and other gold standard countries. The extent of the 'legal right' is defined by the creating authority, and is obviously limited to the territory subject to the jurisdiction of such authority. The inconvertible paper money of Russia, Austria, Italy, and Spain, for example, is clothed with a legal right within those countries respectively, but is not 'legal tender' outside the subject territories. When such money comes into competition, as a medium of exchange, with intrinsic money, it is necessarily at a disadvantage, as value enters into it only relatively to the belief in the good faith and stability of the creating authority, and, as compared with intrinsic money, which is independent of any political accidents, the element of risk, and

the corresponding deduction for insurance, depreciates its market valuation. The authority which creates it may in the shock of nations be destroyed; such authority may as easily destroy the legal right, or it may multiply the right indefinitely for its own use, whereby it at once acquires the same purchasing rights as those of the holders of the previously issued paper. The available quantity of products and services, for distribution among the holders of the medium of exchange, does not correspondingly increase, and thus the competition of purchasers necessarily increases the market valuation of such products and services, or, in other words, depreciates the inconvertible paper. Moreover, the market valuation of such paper money is, to some extent, supported by the belief in the probability of the creating authority at some time redeeming it with intrinsic money; if this probability be lessened by the comparative poverty of the creating authority, another cause tending to depreciation arises. Intrinsic money is exempt from these contingencies, and compared therewith inconvertible paper money, however strong may be the issuing government, is always at a discount.

Silver, copper, and nickel coins in this and other countries with gold monometallic standards are intrinsically worth much less than the aliquot parts of the gold coins, which they nominally represent, and are therefore tokens or symbolic money. In such countries they only have limited legal rights as money, and cannot be legally tendered in exchange beyond fixed maximum amounts. Their issue is for purposes only of commercial convenience, so as to take the place of minute divisions of the gold standard coin, and the amount of the issue should be, and in most

gold standard countries is, limited to the actual requirements for such subsidiary purpose. Where the issue is so limited, such symbolic money circulates freely as the equivalent of gold up to and even beyond the respective fixed amounts of legal tender, but in other respects it is subject to contingencies similar to those affecting inconvertible paper, i.e., its market valuation is maintained at its symbolic level only in the territory of the creating authority, and, if the issue were increased much beyond the actual need as an adjunct to the gold standard, its market valuation would 'fall below par' even in such territory. Such coinage has generally a considerable intrinsic value, measured by the market valuation of the metal entering into its composition, and its market valuation as money, unlike that of inconvertible paper money, cannot be completely destroyed, for necessarily it cannot fall below such market valuation of its constituents. It is an economic hybrid, combining in itself two distinct kinds of capital, viz., Class 2 as a multipliable product in respect of its metallic constituents, and Class 8 as a legal right in respect of the difference between its symbolic value and the market valuation of its constituents.

Evidential Money is paper money constituting legal proof of debts, and falls mostly under Class 8 of capital, legal rights *in esse*, in respect of debts payable on demand, and in a minor degree under Class 9, legal rights *in posse*, in respect of debts payable *in futuro*. The principal forms of evidential money are bank-notes, cheques, and bills of exchange. Its chief *raison d'être* is analogous to, though the converse of, that of silver, copper, and nickel coins in mono-metallic gold standard countries. Whereas the latter

are issued in place of divisions of the standard too minute for convenience, evidential money is created principally to take the place of aggregations of the standard too cumbersome for ready handling. This class of money entitles the owner to collect from a third party a certain quantity of intrinsic money. Subject to certain slight apparent differences mentioned below, its market valuation is necessarily limited upwards to the equivalent of the market valuation of the intrinsic money, to which it gives a title; but its market valuation may fall below such equivalent in respect of three deductions.

1. For insurance against the risk of insolvency of the third party.
2. For hire-valuation, for the time intervening before it can be exchanged for the equivalent intrinsic money.
3. For the expenses necessarily incurred in exchanging it for such equivalent.

The highest class of evidential money exchanges within certain areas for its full equivalent, free from any of these deductions. Examples of this are the notes of the Bank of England and of the Bank of France, which in their respective countries are endowed with the right of 'legal tender,' without, however, limiting the right of the owner to collect on demand from the respective banks the equivalent intrinsic money. Bank-notes issued by local banks, particularly in Scotland, although not legal tender, similarly circulate free from deduction within certain limited areas, where the commercial standing of the issuing bank ranks highly and is well known. When, however, these notes are offered in exchange outside such areas, they are not often accepted free from deduction.

The notes of the Bank of England and the Bank of France are not 'legal tender' outside the respective countries, but, so high is the standing of those institutions, that in most parts of the world such notes are accepted in exchange, at the full equivalent of the intrinsic money which they represent. *Primâ facie* this appears contradictory to what we have said above, for, though nothing may be called for in respect of the first deduction above, the second and third still remain. The reason is, however, that the commercial intercourse between nations renders necessary numerous payments in money from the individuals of one country to those of another, and a note of a bank of unquestionable credit is a convenient way of making such payments by postal remittance, even more convenient than by means of the actual equivalent intrinsic money. It thus occasionally happens that a slightly larger amount in the coinage of the country will be given in a foreign country for a note of the Bank of England or of the Bank of France, than for the equivalent English or French gold coins.

The principal exchanges *inter se* of the inhabitants of most civilised countries are effected by means of cheques. When a cheque is received by B from A, in payment of an amount due for goods sold by B to A, it is *primâ facie* evidence of A's right to the immediate call of that amount of intrinsic money or 'legal tender' from his bankers, which right he transfers to B. B may collect the amount forthwith or pay it to his bankers for that purpose, or, as is frequently done, he may pay it to C in lieu of intrinsic money due to C, who in his turn may similarly pay it to D, and the cheque in this way serves the purpose of a medium of exchange, until it is finally collected from A's banker.

Such cheques usually circulate for their full equivalent in intrinsic money, without deduction for either 1, 2, or 3 above. The reason for this is that payment by cheque, with its attendant risk and cost of collection, is a recognised method of settling commercial transactions, and such risk and cost enter into the price of goods sold; moreover, as regards risk, the cheque is only provisionally accepted as payment between the several parties, and, if A's banker refuse to pay it on presentation, the liability, subject to certain legal refinements, revives from C to D, from B to C and from A to B. The like revival takes place in regard to Scotch or other local notes not paid by the issuing banker, but would not in regard to notes of the Bank of England held in this country, in the event of that institution stopping payment, as such notes are 'legal tender' and finally discharge a debt owing.

Bills of Exchange until due are legal rights *in posse*, and constitute an obligation by the acceptor to pay on a future day a certain amount of 'legal tender' money. Pending the due date, when they become legal rights *in esse*, they frequently circulate as money, subject to deductions 1, 2, and 3 above. In this way a bank 'discounts' them for its customers, i.e., accepts them as money subject to such deductions. Such bank in its turn, before such bills mature, may require 'legal tender' money, and then, subject to similar deductions, such bills are accepted as money by another bank or a discount house. Certain intricacies of commerce, which we need not here discuss, cause bills accepted by houses of the highest standing, such as Rothschilds, to be in circulation. In such cases the element of risk is considered as non-existent, and no deduction is made in respect thereof: also, if such acceptor be domiciled

in London or in other leading commercial centre, the cost of collection (No. 3 above) is considered a negligible quantity, and such bills circulate freely, subject only to deduction for hire-valuation.

No strict logical line can be drawn between bills of exchange on the one hand, and debentures, metal warrants, or other form of capital on which a banker or money lender will make advances, on the other; it is only commercial custom, founded on convenience, which confers on certain bills of exchange under ordinary conditions the purchasing power of a medium of exchange.

All forms of money are usually expressed in the notation of intrinsic money, which is the final standard, and the market valuation of each kind is depreciated, to the extent of the loss or derogation from its nominal value in such notation, which would arise in exchanging it for intrinsic money. Inconvertible paper money of a foreign government, for example, cannot as a matter of legal right, either here or in its country of origin, be directly exchanged for gold, but, if sent to its country of origin, it can be exchanged for products, which, by export to a gold standard country, can be exchanged for gold. The exchanges of international commerce render this process in many cases easy, and thus inconvertible paper money will usually readily exchange for intrinsic money in a gold standard country, subject to deductions for cost of conversion and for insurance against risk above mentioned.

The normal valuation of money, therefore, is based upon the normal valuation of the metals entering into intrinsic money, of which there are two, gold and silver, in use among civilised nations; some civilised

countries measure all valuations by a gold standard, and others, civilised and semi-civilised, by a silver standard. The normal valuation of each of these metals is, as with every other form of products, the line on either side of which the market valuation controlling its production moves, and, as stated above, is reducible to normal remuneration of natural average faculties and normal hire-valuation thereon.

The tendency to continuous fall, in terms of normal remuneration, in the normal valuation of intrinsic money noted above is common to most multipliable products. The fall in the normal valuation of silver has been much greater in recent years than in that of gold. For several years past, one ounce of gold has been exchangeable for two to two and a half times the quantity of silver, which it would have purchased up to the middle of last century, and still sufficient supplies of silver to meet the effective demand pour in, showing that, even at such reduced valuation, it is still profitable to produce it. Its large fall in comparison with gold is not attributable to its demonetisation by certain countries, which has only reduced the annual consumption to the extent of the diminution in the loss by attrition, due to its less general use as coinage; and such diminution would not be considerable, as, in such countries, silver coins are still used as subsidiary to the gold standard as in this country. The causes of the fall, other than those also affecting gold, are two—the discovery of mines of silver of greater accessibility, and the extraction, by means of improved methods, of silver, formerly discarded, entering into ores of copper and some other baser metals. The inventive faculty in fact (including discovery of new mines in its operations) has, during the last half

century, increased the product of silver per unit of normal remuneration, to a greater extent than that of gold; if in the future its operations are relatively more successful in the production of gold than of silver, the valuation of silver in terms of gold will rise, but not otherwise.

Except in the countries of Western Europe, their colonies, the United States, and a few others, the exchange of products with other countries is not extensive relatively to the whole production of each country; most countries are to a great extent still self-contained, resembling economically the hypothetical island, where the problems investigated in the preceding two chapters are supposed to be worked out. Two of these countries, India and China, include together nearly one-half of the world's population; and silver in China at the present time is, and in India until recently was, the medium of exchange and standard of valuations. The total annual exports of Indian produce work out at only $3\frac{1}{8}$ rupees (about $4/2\frac{1}{2}$) per head of the population; the corresponding imports amount to $2\frac{1}{8}$ rupees (about $3/1\frac{1}{2}$) per head. The difference may be taken to represent approximately the annual payments in respect of India's indebtedness to other countries, and only an amount of exports equivalent to the imports can be regarded as applied to obtain foreign products for consumption. The annual cost of living per head must be thirty to forty times that amount; the difference must be produced in the country, and thus, to the extent of 97 to 98 per cent. of its requirements, India is self-contained. China is self-contained to a greater degree. The variations in the relative valuations of silver and gold during the last half century have, in consequence,

been but slightly felt in India and China, and, when silver depreciated in gold standard countries in relation to gold and other forms of capital, it did not correspondingly depreciate inside these two great silver standard countries. The wages of natural average faculties remained the same, or nearly the same, in terms of silver, as fifty years previously, although silver in the period had depreciated fully 50 per cent. in relation to gold: similarly the valuation in terms of silver of all native products, based mainly on the hire-valuation of native natural average faculties, did not materially vary in the period. India has now become virtually a gold standard country; the wages of native natural average faculties expressed in silver has not been altered thereby, but, by legislative means, the valuation of silver coinage in relation to gold has become fixed at a depreciation in silver of $33\frac{1}{3}$ per cent., compared with its valuation in terms of gold obtaining in the middle of the nineteenth century. China still remains a silver standard country.

We wish here to note two results flowing from variations in the relative normal valuations of gold and silver.

1. Such variations affect the purchasing power *inter se* of the products of countries with different standards.

Let x and y represent the normal valuations at a given time of one ounce of gold and silver respectively, and let $x = 16y$; let A and B be two countries trading with each other, A having a gold standard, and B a silver standard.

In A, let the normal remuneration of native average faculties for one day be $\frac{x}{20}$, and in B let it be $\frac{y}{5}$.

We will leave out of consideration, in order to avoid needless complications, any differences of normal hire-valuation or rates of insurance in the two countries.

A productive-amalgamator in A would build up his product in terms of x , and a productive-amalgamator in B in terms of y . In order that the former may get his capital back, it is evident that, when trading with B, for every unit of normal remuneration $\frac{x}{20}$ entering into his product, he must receive the equivalent of $\frac{16}{20}$ or $\frac{4}{5}y$, which would represent four units of normal remuneration in the B country. In other words, the exchange between the two countries would be such that every unit of normal remuneration, entering into the products of the A country, must exchange for the equivalent of four units of normal remuneration entering into the products of the B country.

Now let us suppose the normal valuation of gold and silver to change *inter se*, so that $x = 32y$.

It is evident that, under the altered conditions, exchanges could only operate between the two countries on the basis that, for every unit of normal remuneration entering into the products of A country, the productive-amalgamator should receive the equivalent of *eight* units of normal remuneration in the B country.

2. Such variations affect diversely the purchasing power with other countries of the products of countries with different standards. Under the first supposition above ($x = 16y$), let there be one product z common to both A and B, which both countries exchange on an equal footing with another gold standard country C, i.e., the conditions in A and B respectively would be

such that one unit of normal remuneration in A could, in regard to z , produce the equivalent of four units of normal remuneration in B. Now let us suppose the change to have taken place, so that $x = 32y$. The other conditions in A and B would not alter, and in regard to z the unit in A will still only equal four units in B. The consequence would be that A could no longer exchange z with C, as for the same amount of gold C could obtain twice as much z from B as from A.

Temporary fluctuations in the market valuation of intrinsic money, and consequentially of all other kinds, unlike those of other forms of capital, arise, not only from the over-production and under-production of intrinsic money, but also from over- and under-production of other forms of capital. Temporary over- and under-production of staples necessarily arise from extrahuman causes in favourable and unfavourable seasons, and we have shown in this book (page 173) the conditions of ignorance of ultimate effective demand, under which staples and non-staples alike are produced. The inevitable results of these causes and conditions are that from time to time (1) staples are produced in excess of possible consumption; (2) the production of staples is less than the effective demand, and the existing reserves in consequence are reduced; (3) non-staples generally are produced in greater or less quantities than the effective demand at normal-valuation can absorb; and (4) the production of particular kinds of non-staples similarly rises above or falls below the like effective demand.

All these results find expression in rises or falls in prices, i.e., the effects are reciprocal on the market valuation of money. If staples are produced in excess

of the possible consumption, the productive-amalgamators become apprehensive that the market price will fall (Prop. 4), and accentuate such fall by their anxiety: a fall in price is the same as a rise *pro tanto* in the market valuation of money. It does not mean a general rise in the value of money equivalent to the fall in the market valuation of the particular staples, but only a rise approximating in extent to the proportion, which the diminution in the valuation of the aggregate quantity offered of such staples bears to the aggregate market valuation of all products other than money, of which at the time being there are intending devestors. If the aggregate market valuation in money of all such products amounts to ax , and the market valuation in the aggregate of the particular staples (forming part of ax) amounts to bx , which falls to $(b - c)x$, then the market valuation of money has risen in the proportion which cx bears to ax . Converse results, similarly measureable, follow from an increase in the price of a product.

It is obvious that fluctuations in the valuations of different commodities may, in their effects on the market valuation of money, counteract each other—a decrease in the valuation of one commodity may be balanced, by a co-temporaneous increase in the valuation of another. At times, however, financial storms sweep over the exchange centres of the world, causing an almost universal fall in the price of capital other than money, and a corresponding rise in the market valuation of money. Such storms are usually immediately preceded by periods of generally high prices (i.e., a low market valuation of money), which induce over-production, and, as every productive-amalgamator relies on effecting a penultimate exchange into money (or debts

which are a right *in esse* to money), a general apprehension of fall in prices arises, as soon as productive-amalgamators find they cannot effect their contemplated re-exchanges into money.

The normal valuation of money is not ultimately affected by these movements, which are reciprocals of the variations in the market valuations of other forms of capital. Such normal valuation, as before stated, is determined by the comparative cost in relation to other products, in terms of normal remuneration and normal hire-valuation, of the least accessible portion of the metal used for intrinsic money, the production of which the effective demand for the time being renders necessary. The normal valuation is the line of stability in the market valuation of money as of other products: the variations in its market valuation are movements above and below the line of stability, but, for the reasons given, such movements are the converse of those in the market valuations of other products.

The market hire-valuation of money similarly exhibits special phenomena.

It is necessary to note a distinction between the market hire-valuation of money for short periods and for long periods. Money, as the medium of exchange, is the only form of capital the owner of which, under ordinary conditions, can acquire any other form, and, while a man's capital is in the form of money, he is in a position to take advantage of any favourable exchange which offers. Immediately he exchanges his money for some other form of capital, he parts with this universal investing power; if thereafter he be offered a third form of capital which he may wish to acquire, he must re-exchange his prior purchase into money before he can obtain the new form of capital, and the variation

in the market valuation of his first investment may involve considerable loss in the fresh exchanges. The various forms of capital other than money have different degrees of convertibility; some, such as Consols under ordinary circumstances, approximate in this quality to money; others, such as a house built to suit extraordinary whims, or specially designed furniture, are often practically inconvertible.

If a capitalist lend his money so that he can recall it at any time, he does not part with this power of investment, and, if a promising exchange offer, he can effect it. If he make his loan for three months his power of investment is but slightly retarded; but, if he make a loan for five or seven years, he practically parts for that period with the power of making fresh investments, subject, of course, to what we have said above as to the degree of convertibility of the debt, which his loan has created. As all forms of capital tend to equivalent rates of hire-valuation (Props. 1, 7, and 8), this power of seizing a favourable occasion enters into what are designated the call rate and short notice rate of interest of money, and, if the capitalist retain the power of universal investment, he ordinarily accepts a much lower rate of hire-valuation, than if he part with the power for a lengthened period. It thus follows that usually on the same day the rate of interest (hire-valuation) for call money, short loans, loans for three months, loans for six months and loans for longer periods, will vary as indicated, and the market valuation of an income-bearing security like Consols will be such as to give the intending investor a smaller rate of interest, than he can obtain by investing in another equally safe but less convertible security.

Not infrequently, however, the 'money market'

exhibits the converse to the foregoing, and offers a higher rate of hire-valuation for a short loan than for a loan for three or six months; this occurs if the owners of money think that its market rate of hire-valuation will shortly fall, when they will discount a bill with three months to run at a lower rate than they will lend for shorter periods, and a bill with six months to run at a still lower rate.

The market hire-valuation of money, under ordinary conditions, will move up and down with that of other forms of capital, and in consequence will often move in a direction opposite to that of the concurrent market valuation of money: when money falls in value, i.e., when the prices of other products generally rise, the market hire-valuation of money frequently rises, and *vice versa*. When profits, i.e., the hire-valuation of the capital of productive-amalgamators, are high, a demand for the use of money for short or long periods arises on the part of productive-amalgamators, with the view of increasing the volume of their productions, and their competition *inter se* tends to raise the hire-valuation of money; the converse happens when profits fall, and at such times the writer has known money for short periods, between two Stock Exchange settlements, to be absolutely unlendable. At the times of financial storms, however, mentioned above, the market hire-valuation of money separates from profits, and for a time rises, while profits fall. At these times the productive-amalgamators, not being able to secure the needed money by the regular sale of their products, have to make sacrifices to obtain it. They must either realise their products at a loss, or pay a high rate for the loan of money, and these conditions, for the time being, cause its market

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valuation and its market hire-valuation to move upwards together.

The surplus stores of intrinsic money and of the metals from which it is coined collect in certain institutions, such as the Bank of France and the Bank of England, in the various commercial centres. When these stores tend to depletion, or there is apprehension that they will be depleted, the money dealers seek to check the tendency by raising the market hire-valuation of money. Such tendencies arise from the existence or apprehension of the financial storms indicated above, from one nation's indebtedness to another for differences in hire-valuation of capital or for excess of imports over exports, from liquidation of international indebtedness, or from many like causes. The cost in freight, insurance, and hire-valuation of transporting intrinsic money or the metals from which it is coined is an appreciable amount, and, when a country has urgent need of intrinsic money or its corresponding metal, such need is reflected in the rate of exchange, i.e., the market valuation in the currency of such country of the intrinsic money of another. When such market valuation is more than the equivalent of the metal *plus* the cost of transport, including the rate of hire-valuation for the time of transport which the money or metal could earn in the country where it is stored, such money or metal is transported to the country urgently needing it. When several countries simultaneously have urgent need, they bid against each other in the rate of hire-valuation and in the rate of exchange.

Intrinsic money and the corresponding metals thus tend like other products to flow where they are most urgently required; but when the production of the

metals is in excess of the world's requirements the surplus, as stated, accumulates in the Bank of France, the Bank of England and similar institutions, and at such times the hire-valuation of money, in the countries where such institutions are situate, necessarily falls.

CHAPTER X

RECAPITULATION

WE shall proceed to consider some of the concrete problems of human economics, but it will aid our investigations if, before entering upon them, we shortly review and summarise the conclusions at which, up to this point, we have arrived. These conclusions in many respects diverge from those of other writers, and it is necessary to recall them as our subsequent reasoning is based thereon.

In our first book on Natural Economy we surveyed the field within which human economics work, and the physical limits of the science. We made our investigations into Natural Economy under two heads—objective and subjective. Under the former, eliminating human motives and institutions, we examined the operation of human faculties in satisfying human requirements. While subject to most of the limitations controlling other terrestrial species, we found that civilised man differed therefrom in two important respects, viz:—

1. His production is not limited by the objects which the haphazard of nature throws in his way, nor by the quantity of his individual muscular force, and
2. He has two outlets instead of one for the excess of production beyond the necessary

provision for his own existence and depreciation; he can apply it in common with other terrestrial species to the increase of his species, or (which other species cannot) to the improvement of his conditions of existence.

Analysing the phenomena of human production we found it consisted of three elements, distinguished as Natural Objects, Force, and Intelligence, all of which are necessary to every act of production. Natural Objects, we found, separate themselves into three classes with important differences in their relation to production; these we distinguished as Undiminishing Objects, or those which, without human effort, are replaced immediately they are consumed, Replenishing Objects, or those which, without human effort, are replaced when consumed, but not immediately, and Unreplenishing Objects, or those which, when consumed, are not replaced. We further found that all Natural Objects, in relation to present-day human economics are practically inexhaustible. Force, the second element of production, we found also divisible into three kinds, viz., Human Force, or muscular force of the human species, Cosmic Force, or those forces in existence actively at work and running to waste if not utilised, and Produced Force, or the forces lying latent in surrounding Natural Objects, which human intelligence can make active. Mobility was noted as an important quality of force in relation to production, and we found that Human Force is mobile but not universally so, that Cosmic Force is for the most part immobile, but, as the result of new inventions, is daily acquiring mobility, and that Produced Force possesses most mobility, which is the chief quality that prompts its production. Cosmic and Produced Forces, in relation

to human production, we demonstrated to be practically inexhaustible, but all three kinds of force we found were subject to economical (as distinguished from physical) limitations of mobility. In its application to human production, economies in the quantum of force are continuously effected. Intelligence, the third element of production, we distinguished from the inventive faculty, which, though a marvellous aid to, is not an element of production. Intelligence required for human production is only found in the human species; it is the only limited element of production, and, proportionately to the number of the species, cannot be quantitatively increased, but its productive capacity per unit is continuously increased by economies effected in its application to production, whereby each unit is enabled to direct larger quantities of force. This involves an initial loss in production and by education, by withdrawing intelligence available for production and applying it to the training of intelligence, but the ultimate gain to production is very great. Three principal means by which intelligence is saved in production are, the training of certain domestic animals, the employment of automatic machinery, and, the appropriation of individuals to special and repeated acts of production.

Examining the phenomena of the elements of production in operation, it appears that human powers of production are limited, and the ultimate aims of human economy can be attained only when production is more than sufficient to maintain the community; and the extent to which such ultimate aims can be attained depends upon the extent of the surplus ratio. The raising of the degree of intensity of production tends to increase the surplus ratio, by effecting savings in

the application of intelligence to production, and as regards undiminishing objects such tendency continues *ad infinitum*. But, since natural objects utilised in production are appropriated in the order of relative accessibility, such tendencies are continuously checked in varying degrees, as regards the several kinds of unreplenishing objects by decreasing accessibility, and as regards replenishing objects, it is similarly checked when the recuperative powers of nature at the most favourable site are trenched upon. The effect of intensity of production upon products compounded of two or more natural objects is the resultant of its tendencies as regards the several constituent parts, and, in so far as replenishing and unreplenishing objects enter into production, there is a degree of intensity, which we have called the Economical Point, at which are obtained the highest quantitative results per unit of intelligence, or, in other words, at which the surplus ratio is greatest.

When the intensity of production is such that surplus products arise, such surplus products can be applied to the increase of the species, to the improvement of the conditions of existence, or partially to each. The staples of existence are mainly vegetable products or directly dependent thereon, but the quantity and kind of staples required *per caput* vary in the same community at different periods, and in different communities at the same period. If any portion of the potential surplus products be applied to the improvement of the conditions of existence otherwise than by cessation from labour, non-staples are produced. The possible consumption, and therefore the production, of staples is within a narrow margin proportionate to the number of the community from time to time, and

the potential degree of intensity in the production of staples therefore depends upon the number of the community and rises or falls therewith; further, in consequence of the entry of replenishing and unreplenishing objects into staples, there is an economical point of intensity in the production of some of them, which in this and other countries has been passed. The production of non-staples can commence only at the degree of intensity in the production of staples at which surplus products arise; from that degree, up to the economical point in the production of staples, the quantum of intelligence potentially available for the production of non-staples continuously increases, and, up to that point, the diversion of a part of the surplus products to increase of the species can take place, with present diminution in, but with ultimate increase of, the potential improvement in the conditions of existence. The economical point of the whole production, staples and non-staples combined, of a community may be at a higher degree of intensity as regards staples than the economical point of staples alone. Self-contained communities do not exist among civilised countries, but nations and districts approximate thereto and have economical tendencies in the direction of a theoretical self-contained community. The tendency in a self-contained community would be for the population to cluster round a convenient centre, with density of population and intensity of agricultural production diminishing as distance from the centre increased; in the same community independent centres would form as the population increased, and would react upon each other, when the expanding areas diverging from such centres overlapped. The population of a community tends to increase up to the

economical point in the production of staples and non-staples combined, but such economical point is rendered unstable by the operations of the Inventive Faculty and by the incomplete separation of communities. The conditions of existence, as regards material products, cannot be improved beyond the state corresponding to the economical point for the time being of staples and non-staples combined.

Such being the limits and possibilities of Human Economics, the subjective inquiry arises: With such possibilities, what will the human race do? Looking at the human race as a whole we find it controlled by impulses of which two are dominating or primary, viz., the impulse for a prolonged life, and the sexual impulse, the former being supreme. These primary impulses, up to the economical point in the production of staples, tend to co-operate with the objective laws of production in increasing the density of population. But, at the point at which surplus products arise, the power of gratifying secondary impulses arises. These secondary impulses are as numerous as individuals, but some of such impulses tend to become fixed as national characteristics and to be inherited. The gratification of the secondary impulses and of the primary impulse for life prolonged beyond the productive age involves the consumption of products by those who have supplied no part of the intelligence necessary to the production thereof. This is made possible by the institutions of private property and of exchange, which civilised nations have found advantageous to adopt, both to encourage industry and to stimulate the operations of the Inventive Faculty. In a slave-owning community these institutions could be pressed to the point at which the workers received only staples sufficient for

their existence and to provide for their own depreciation; but in a free community that is not possible, and historically we find that the conditions of existence of the workers improve with an increase in the surplus ratio. The potential productive powers of a free community, we found, would be applied in the following order:—

- 1st. To the production of staples proportionate to the number of the community.
- 2nd. To the production of non-staples in the nature of semi-luxuries which, according to the habits of each community, the producers require to propagate.
- 3rd. According to the habits and tastes of each community and of its individual members, either production would cease or be directed to gratify the diverse luxurious impulses.

Such being the field in which Human Economy works, we entered in this book upon an examination of the method of working in civilised communities, who, we find, for the reasons stated above, have universally adopted the two dominating institutions of private property and exchange. After defining and illustrating the use attached in this work to the several terms 'value,' 'valuation,' 'hire-valuation,' 'owner's valuation,' 'buyer's valuation,' 'market valuation,' 'price,' we adopted a definition of the term 'capital' on which all our arguments in this book are founded, viz., everything in which an individual or group of individuals has a legal estate and for which there is a buyer's valuation, and capital as thus defined we classified under ten heads. Capital, as thus defined, includes not only the elements of production but also aids to production and the

products, and all production is the amalgamation of various forms of capital. The work of production is brought about by a class whom we have called productive-amalgamators, who are the capitalists at whose risk are made the amalgamations necessary to production. A distinction has to be drawn between incomplete and complete products, and the whole of the amalgamations necessary to evolve a complete product from its original elements are seldom undertaken by one productive-amalgamator. Another important distinction has to be drawn between multipliable products, or those to the evolution of which in any required quantity there is practically no physical limitation, and singular products, which are each *sui generis* and cannot be evolved in unlimited quantities. The dissolution of capital occurs in three ways, viz., by decay, by destruction, and by consumption. With few exceptions decay attacks all forms of capital. Six kinds of destruction were noted, viz., physical destruction, loss by breach of the laws of property, loss by carelessness and mishaps in the processes of amalgamation, loss by miscalculation, loss by obsolescence, and loss by fiscal changes. Consumption uses up complete and incomplete products alike, but some forms of capital such as coal, human faculties, &c., may be consumed directly as complete products, or used up in further amalgamations necessary to convert incomplete into complete products.

All material forms of capital are either complete or incomplete products, and the supply of both is ultimately regulated by the effective demand for complete products. The cosmopolitan laws limiting such effective demand are necessarily the same as the objective and subjective laws of Natural Economy. Up to the point at which a community produces enough only for existence and

for making good depreciation, both objective and subjective causes coalesce in directing all intelligence to the production of staples; this is a condition to which the Esquimaux and Laplanders approximate. Where the production of non-staples arises, the gross effective demand tends to increase from two objective causes: the increase of the population up to the economical point, and the operation of the inventive faculty. Two objective causes may tend to limit such effective demand, viz., the decrease of the population before the economical point has been attained, and the increase of the population beyond the economical point. In a community where slavery obtained, the subjective limits on effective demand would be a negligible quantity. Subjective causes induce great variations in the several free communities in the quantity and kind of staples deemed necessary to existence, and also in the quantity and kind of staples deemed necessary to induce propagation. Subject to such variations, the effective demand for staples varies, within slight limits of deviation, *pari passu* in each community on the same plane of civilisation with the numbers of the community. The objective limits on the effective demand for non-staples is in free communities further cut down by two subjective causes, viz., by the application of part of the surplus production of staples to increase of the population, and by the preference of workers for indolence over luxury. There is a tendency towards assimilation of conditions of existence among all civilised nations, but meanwhile great differences continue, not only as between communities but between different districts in the same community. Two artificial causes also tend to prevent the natural action of effective demand between communities, viz., (1) the imposition of duties

upon imports and the payment of bounties upon exports, and (2) the existence of legal rights involving debts due from one community to another. The particular kinds of non-staples for which the effective demand within these limitations can be made cannot be brought under law, as they depend upon fashion and individual whims; it is only possible to note that if the distribution of surplus products be uneven the demand is for intense luxuries; if the distribution be fairly even the principal demand is for diffuse luxuries.

Intensity of production involves a continuous series of exchanges up to the acquisition of the various complete products by the individuals who consume them. Four kinds of exchange, distinguished by the inducing motives, take place, viz., investments for direct consumption by the investor; investments for re-exchange by the investor without amalgamation (this is the occupation of factors); investments for amalgamation with other capital, followed by exchange of the resulting product (the occupation of productive-amalgamators); and investments for amalgamation with other capital, followed by consumption by the investor of the resulting complete products. Under ordinary circumstances all other forms of capital can be acquired by money or debts, and the acquisition of money or debts is the last stage but one in working out the ultimate object of factors, productive-amalgamators, and the majority of those who hire out their faculties. The penultimate object aimed at by productive-amalgamators and factors in entering on their exchanges is to get back, at the end of the series, a larger amount of money or debts than that with which they start, and from this flows the proposition that the investment of money or debts by factors and productive-amalgamators

tends to bring about equivalent gains on all such investments, proportionate to quantity invested, and to time elapsing between the original investment and the ultimate re-exchange of the product into money or debts.

We next investigated the subject of valuations and sought answers to the following questions: (1) How are the relative valuations of different forms of capital determined? (2) What is the proportion borne by the valuation of capital to its hire-valuation? and (3) What determines that proportion? We dealt with these questions first on the hypothesis of the existence of slavery in the community, and, after introducing and defining the terms 'normal valuation' and 'normal hire-valuation,' we, *inter alia*, established the following propositions:—

The normal valuation of a slave (natural average faculties) is reducible to terms of staples dissolved directly and indirectly in his production, and normal hire-valuation thereon.

The normal valuation of an average slave at or past maturity is also equal to the discounted valuation of the staples, less those necessary for his future maintenance, which his faculties applied to the production thereof may be expected to produce.

The normal ratio of hire-valuation to normal valuation is such, that the net cost of an average slave in staples at the age of highest valuation, *plus* such normal hire-valuation thereon, will equal the discounted valuation (at such normal ratio of hire-valuation) of the future gross products of staples, less the staples necessary for his future maintenance, which his faculties, applied thereto, may be expected to produce.

Under conditions of slavery, we found that the rate

of normal hire-valuation, through the increase in the number of slaves, would tend to sink to the lowest point, i.e., to the point at which surplus products commence, and that this tendency enured to the benefit of capitalists owning advantages of site, at the expense and to the disadvantage of all other forms of capital; further, that the immediate tendency of savings in the application of intelligence to production, resulting from the operations of the inventive faculty, would, under such conditions, be adverse to the owners of advantages of site, but that the ultimate tendency would be for them to reap the whole benefit thereof, and this would be checked only by the probable refusal, at some stage, of productive-amalgamators to perpetuate their class.

Tracing next the results following from free labourers owning only their own faculties working in a slave-owning community, we found that the propositions which we established under conditions of slavery are not affected thereby, except that the profit-absorbing tendency of advantages of site would be more readily checked by means of emigration.

Dealing next with modern conditions, in which slavery is generally non-existent, we had to relinquish the unit, the normal valuation of a slave, on which all normal valuations and normal hire-valuation were built under the preceding two hypotheses.

After some complex investigations, we found our new unit in the normal remuneration of free average faculties, which is the equivalent of a certain proportion (determined by the resultant of non-parallel forces) of the average quantity of staples that can be raised, in the state of knowledge for the time being, on the least accessible land, which from time to time is required to be cultivated to meet the effective

demand for staples. And the ratio borne by normal hire-valuation to normal valuation, we found, would be worked out on the same lands, and would be determined from time to time by the *pro rata* division (having regard to quantity and time) of the normal valuation of the surplus production from such lands, remaining, after deducting the normal remuneration of average faculties directly used and the normal valuation of other capital dissolved in such production, between the several units of normal remuneration entering into the several capitals (other than such average faculties directly used) necessary to such production.

These conclusions would be absolutely correct if worked out in a self-contained island, with adjacent islands available for emigration. In Cosmopolitan Economy they must be regarded only as the controlling tendencies, affected in actual mundane conditions by various retarding causes.

Applying our units of normal valuation and normal hire-valuation to the several classes of capital we found :

1. The working out of the normal remuneration of average human faculties would be affected by various causes including difference of race, difference of language, localism and political regulations, which had induced differences in the quantity and kind of staples with which the several races are content to exist and propagate, and differences in the relative efficiency of average faculties in different countries and districts. The modern tendency is towards the disappearance of these differences.
2. The normal valuation of a multipliable product is

- equal to the aggregate of the units of normal remuneration, amalgamated or otherwise dissolved, in the evolution of the most costly portion of such product necessary to meet the effective demand for direct consumption of the product or of the several complete products into which it enters, *plus* normal hire-valuation on the units of capital employed in its production.
3. The normal hire-valuation of an advantage of site in production of multipliable products is equal to the aggregate of the units of normal remuneration saved in the evolution of products by the use thereof, as compared with the evolution of the most costly portion of similar products necessary to meet the effective demand for direct consumption thereof or of the several complete products into which they enter, *plus* normal hire-valuation, on such several units.
 4. The normal rate of remuneration of acquired superiorities of faculties is equal to the normal remuneration of average faculties *plus* normal hire-valuation and depreciation on the units of normal remuneration, amalgamated or otherwise dissolved in the acquisition of such superiorities, but the market remuneration thereof, in many cases, differs considerably from such normal rate of remuneration.
 5. Innate superiorities of faculties have no normal remuneration; their remuneration depends only on the market valuation of their services, or of products resulting therefrom.
 6. The normal valuation (if any) of a multipliable natural object is determined in the same way

as the normal hire-valuation of an advantage in production (see *supra*).

7. Singular natural objects and singular products have no normal valuation, they are susceptible only of market valuation.
8. Advantages of site in connexion with production have normal hire-valuations as advantages in production (see *supra*), and the normal valuation is deduced therefrom according to the ratio for the time being existing between normal hire-valuation and normal valuation. Advantages of site connected with direct consumption are susceptible only of market valuation.
9. Fixed objects acted upon by processes of production, if for the purposes of production, have normal valuations based upon that of the site, *plus* the normal valuation of the capitals amalgamated or otherwise dissolved in connexion therewith, *plus* normal hire-valuation during construction. Fixed objects acted upon by processes of production, for the purpose of or connected with direct consumption, are susceptible only of market valuation, but have relative valuations based on competition *inter se*.
10. Legal rights *in esse* have normal valuations based on those of the capital to which the right exists, with deductions therefrom for risk when necessary.
11. Legal rights *in posse* have normal valuations equal to the discounted valuations of the capital claimable, less deduction for risk where necessary.
12. Alienable reputations, similarly, have normal

valuations equal to the discounted valuations of the capital estimated to be gained thereby, less deductions for risk.

These conclusions being based on the normal remuneration for the natural average faculties of a man as the unit on which the valuations of capital were built, we considered the position of women in Cosmopolitan Economy, and found that—

1. In regard to products into which their natural average faculties enter, they individually rank as the owners of a fraction of the unit based on man's natural average faculties.
2. As ministers to and partners in the gratification of the second dominating impulse, they possess capital of a distinct class.

Money, we found, exhibits some special features of value. It is of three kinds: Intrinsic, Symbolic, and Evidential. Intrinsic money is almost universally gold or silver, which are multipliable products with normal valuations, and the normal valuations of symbolic and evidential money are deduced therefrom as legal rights *in esse* or *in posse*. The existence of two standards of intrinsic money disturbs the exchange of commodities. Temporary fluctuations in the market valuation of intrinsic money are the reflex, not of the over- or under-production of the standard metal, but of the over- or under-production of other forms of capital. The hire-valuation of money moves independently of its market valuation, and sometimes in an opposite direction to that of the hire-valuation of other forms of capital.

CHAPTER XI

OBSERVATIONS ON WEALTH AND CAPITAL

IN the first chapter of this book we defined wealth as capital less liabilities. Our investigation so far has been confined to capital, the positive element of wealth. It is also necessary to consider the negative element, liabilities. Concurrently we may conveniently review certain important distinctions and characteristics of capital. In accordance with our definition, and with the facts, it is obvious that an individual may legally own a large amount of capital and yet possess no wealth—in other words, he may own many valuable assets, but his liabilities may exceed the buyer's valuation of such of his assets as are susceptible thereof. As regards two forms of capital, debts *in esse* and *in posse*, it is moreover evident that, to the same extent that they constitute the capital of one individual, they constitute the liabilities of another.

The aggregate wealth of a community will not therefore be the aggregate capital of the individuals composing the community. There must first be deducted all the legal rights *in esse* and *in posse* against other individual members of the community: legal rights, however, against individuals *extra* the community, or against other communities, enter into the aggregate individual wealth and the total wealth

of the community. From the total aggregate wealth of the individuals of a community there must also be deducted, to arrive at the wealth of the community, the liabilities of a community in its commune character, such as national and municipal debts. These are equally deductive whether the creditors are members of or outside the community, but in the former case they of course enter into the total capital from which the liabilities are so deducted. There is a vast quantity of property held by governments and municipalities which, if offered for sale, would have buyers' valuations, and these are additions to the wealth of the community over and above the aggregate wealth of the individuals. These include gas and water properties, docks, &c., which are earning revenue arising from production or consumption by individuals. Like properties are often held by productive-amalgamators, and do not lose their character of capital by transfer to government or municipal authorities. Other national or municipal properties, not income earning, cannot be considered as additions to the wealth of the community, although possessing the attributes of capital. In this category fall public roads and parks, which are acquired with the intention of permanent retention for the public use. In such case, by removing the land from the market, the buyer's valuation of adjoining lands is increased probably to the full extent of the buyer's valuation of the land constituting such roads or parks, and such increase would be lost if the lands were sold for private purposes. War-ships, defence works, military and naval stores similarly, although produced by the amalgamation of capital, cannot be reckoned as an addition to the national wealth, as they are parts of the means by which security is afforded, which

enters into the buyer's valuation of other forms of capital in the community.

Wealth, from the cosmopolitan point of view, excludes some capital entering into individual and communal wealth. All legal rights *in esse* and *in posse* against other communities, or against the members of other communities, must be deducted from the aggregates of individual and communal wealth when summarising cosmopolitan wealth.

We may shortly set forth the above as follows:—

INDIVIDUAL WEALTH is individual capital, *minus* individual liabilities.

COMMUNAL WEALTH equals aggregate individual capital, *plus* communal capital, *minus* communal liabilities and legal rights *in esse* and *in posse intra* the community, and also *minus* individual liabilities *extra* the community; or, in other words, aggregate individual wealth, *plus* communal capital, *minus* communal liabilities.

COSMOPOLITAN WEALTH equals aggregate individual capital, *plus* aggregate communal capital, *minus* legal rights *in esse* and *in posse* entering into such capital.

The distinctive phenomenon of capital, the positive element of wealth, is the existence of a buyer's valuation; therefore nothing possesses a buyer's valuation which does not directly or indirectly contribute to the gratification of a human impulse, and capital can only come into existence in connexion with production. The one limited element of production is intelligence, which inheres only in individuals, and it therefore follows that, except complete products ready for consumption, all forms of capital other than natural faculties require further

amalgamation with natural faculties to evolve complete products. Moreover, unless such forms of capital can be utilised in the evolution of complete products for which there is an effective demand, they lose the qualities which gives them a buyer's valuation and in consequence cease to be capital. The causes controlling effective demand were investigated in the fourth chapter of this book. In a free community it depends primarily on the number of the community and the potential surplus ratio in production, and secondarily on the number of the community who apply their shares of surplus products to the increase of the community or to the acquisition of non-staples, instead of to indolence. In any state of civilisation for the time being (by which we suppose the inventive faculty for the time inoperative), the aggregate of all capital, other than natural average faculties and complete products, is therefore limited by the aggregate of natural average faculties applied to production, and conversely, the aggregate of natural average faculties so applied is limited by the aggregate of such other capital. In other words productive-amalgamators' capital and natural average faculties can only increase *pari passu*. To appreciate the full effect of this it must be remembered that, except complete products, the stores of which are relatively insignificant, and national debts, perhaps all capital other than natural average faculties is directly or indirectly productive-amalgamators' capital. With the exceptions stated, all income-producing investments, money at interest, acquired superiorities of faculties, &c., find their way through more or less tortuous channels to the productive-amalgamators, in the course of whose amalgamations their hire-valuation is paid.

This leads us to some important conclusions: the first of which is that *a policy of universal thrift would bring about the degradation of our species*. To get a clear view of this tendency we must take an extreme example. Let us suppose again our self-contained circular island populated up to the economical point, and that those owning only average faculties have, by the laws we have investigated, obtained their *pro rata* shares in the potential surplus products and apply them on the whole rationally, partly in making good depreciation, partly in attainable luxuries, and partly in rest from labour. Now let us suppose that, in consequence of a crusade of the preachers of absolute thrift, they and all other capitalists forgo absolutely all luxuries and consume only staples. Only staples would in consequence be produced, but these are, by the hypothesis, already produced in sufficient quantities. All capital of productive-amalgamators not concerned with staples would *ipso facto* be destroyed, and the owners of average faculties and of acquired superiorities of faculties engaged upon the production of non-staples would either starve, live upon the community, or emigrate. The first and second courses are alike out of the question, and the island would be partially depopulated, leaving surplus products to be applied to the only alternative object indicated in our first book, the increase of the species. As this impulse operated the island would repopulate and staples would be produced—the economical point being passed (*hyp.*)—under more onerous conditions, reducing continuously the surplus ratio, until at last there would be a meeting point where the surplus ratio, after providing for the depreciation of the workers, would vanish. The island would have recovered its population,

but the inhabitants would be condemned to a life of hard labour, a purely animal existence, enabled in common with all non-human species to gratify only their primary impulses.

The working of this tendency is obscured in present mundane conditions by the operations of the inventive faculty, which continually alters the surplus ratio, and by the fact that the larger portion of the earth's surface is still populated below the economical point. The latter fact, coupled with the increasing facilities of transport, practically destroys the supposition of the self-contained island in our illustration, and a man who forewent all non-staples could profitably employ the capital he had saved; but all men could not do so. And the man who abstains from present luxuries usually does so only with the purpose of attaining sooner a life of luxurious ease. There are two extreme economical characters possible—the miser who lives only on staples and invests all his share of the surplus ratio, and the spendthrift who squanders all his capital on luxuries. If the bulk of the race were fashioned on either character, the race would degrade until the vice destroyed itself. A world of misers would become a world of staple producers, for there would be no field for investment of savings. A world of spendthrifts would degenerate to the condition of tillers of the soil without the aids of the implements educed by the inventive faculty, for they would destroy the means by which the latter could be produced. The ramifications of private property and exchange make it difficult to view the economical possibilities of the race as a whole, but we cannot manifestly pass the bounds indicated in our first book. Until a surplus ratio exists only the primary impulses

can be gratified. At that point we can either (1) increase the species, or (2) improve the conditions of existence, or (3) do both in a less degree. While the world is populated below the economical point the latter is the course best suited for the present and future well-being of the race, and to bring that about we must be neither misers nor spendthrifts.

A second conclusion, flowing from the inter-dependence of natural average faculties and other forms of capital, is that *the object of individuals who abstain from luxuries in order to increase their wealth is attained only if a proportionate number of other individuals do not*. Individuals can only be wealthy relatively. If all could, they would live in luxurious ease. But the aggregate of savings, i.e., capital other than natural average faculties, is limited by the quantum of natural average faculties which, to meet the effective demand, can be employed. Capital other than natural average faculties is in effect a right to (1) the immaterial services of owners of natural average faculties, or (2) by the aid given to natural average faculties in production, a right to a share of the resulting products. If everyone saved, everyone would, unless our proposition be correct, have a right to the natural remuneration for his own faculties *plus* a share in the productive results of the faculties of another man, which would be mutually destructive and therefore impossible. Individual wealth is relative, and luxurious ease, the object of saving, can only be obtained if there are individuals possessing only natural average faculties, who will make the capital educed from savings effective. The strength of the sexual impulse ensures ordinarily the existence of sufficient natural average faculties to make savings effective, and in this country

our poor-law legislation, ensuring the provision of staples for everybody, has encouraged the gratification of the sexual impulse to the borders of starvation. It must be remembered that our conclusions have reference to Cosmopolitan Economy. A community may exist whose accumulated wealth gives it a right over the products of other communities. In such case the production of the favoured community may be practically nil, and the resident owners of natural average faculties only will be employed mainly in rendering immaterial services. Conditions approximating to those indicated obtain in the State of Monaco, but this in no way affects our cosmopolitan conclusion. The world could not be made up of Monacos. The existence of such States is only possible because there are industrial communities, which make effective the rights of the residential capitalists over the world's products.

A third important conclusion is that *the interests of those owning only natural average faculties are in no way more opposed to other forms of capital than are such other forms of capital inter se*. The mischievous theories of the old economists placed labour and what they called capital in opposite camps, and the remuneration of 'labour' was alleged to vary more or less proportionately as the share of products seized by 'capital,' i.e., all forms of capital except natural faculties, was small or great. 'Capital' was represented as one allied army, all working together to exploit 'labour,' and leave it as small a share of the products as possible. Practical men, while unable to confute the reasoning, knew that the conclusion was wrong, as 'capital' and 'labour' were known to prosper together; when wages were high the reward

of 'capital' indicated by profits was also high, and when wages fell, the rate of profits also fell. From our previous analysis of production under the institutions of private property and exchange, it appears that nearly every complete product is the result of the separate ventures of numerous productive-amalgamators who, instead of acting as a combined army against labour, are working as separate units against each other. By reference to the pig-iron cost sheet given in the second chapter of this book, it will be seen that while wages and salaries enter into cost to the extent of 6s. per ton, the materials (coke, limestone, and ironstone) account for £2 15s. 9d. per ton. The productive-amalgamator is, therefore, much more concerned in 'beating down' the price to be paid for ironstone and limestone, than in 'cutting down' the rate of wages. It is true that if the productive-amalgamator obtain, say £3 12s. per ton for his pig iron, and pay 7s. per ton for wages, there will be 1s. per ton less profit or greater loss for himself, than if the wages cost him only 6s., and the reduction in his profit or increase in his loss will enure to the benefit of the owners only of faculties and acquired superiorities; it is, however, equally true that if the coke in a ton of pig iron cost him £1 11s. 11d., his profit will be 1s. less per ton or loss 1s. per ton more, than if the like quantity cost him £1 10s. 11d., and the gain or loss of the productive-amalgamator who sells the coke will be inversely varied.

As explained in the fifth and sixth chapters of this book, products under the institutions of private property and exchange are evolved and exchanged in the course of a continuous struggle between all classes of capitalists (inclusive of owners of faculties); every

investor tries to acquire as cheaply and every devestor to sell as dearly as the market will allow. In the state of ignorance of the extent of effective demand under which products are educed, particular classes of products—metals to-day, textiles, mayhap, to-morrow—fall short of, or exceed from time to time, the effective demand. In consequence, the market valuations of all the forms of capital associated in each of such classes of products rise and fall together. A rise in the market valuation of pig iron reacts on the market valuation of the incomplete products and the hire-valuation of the faculties entering into the production of pig iron, and all capitalists so associated in its production share in the productive-amalgamator's good fortune. Conversely a fall in the market valuation of pig iron forces down the price which the productive-amalgamator can afford to pay for the constituent materials, and compels him to cut down the rate of wages. The frequent and inevitable recurrence of this cutting down process assists the belief in the old economists' view of the natural enmity of capital and labour. They are no more enemies than the co-operators in a fishing fleet, whose rewards rise and fall together. The consideration of the economical effects of trades unions will cause us to return to this subject in a subsequent chapter.

A short consideration of the characteristics of national wealth will be useful. We use the term national wealth in lieu of communital wealth because the term community, as we have used it, is also applicable to smaller aggregates than a nation, such as a municipality. The term national wealth recognises the segregations which history has brought about, resulting in certain separated aggregates of the human

race, bound together by domestic laws for the government and defence of the individuals constituting such aggregates. The separate circumstances of each nation would fall for consideration under the next division of Human Economics, Communital Economy, (see First Book, page 3), but some general features of the relations of nations to each other from the economical point of view may fitly be considered here.

A principal fact to keep in view is that *national wealth is relative, not absolute*. Like an individual, a nation is poor or rich only in comparison with its compeers. The increase of the population of the civilised world and the multiplication of labour-saving devices have co-operated to extend enormously the total of capital entering into wealth, and nations are poor or rich relatively to the proportions of such capital free of liabilities, which the individuals of such nations have secured for themselves. The poorest of the great powers of to-day possesses more absolute wealth than the richest of a century ago, but, if concurrently its proportion of the aggregate of the world's capital free from liabilities has diminished, such nation is poorer in relation to all the objects of national wealth.

Next we wish to lay down the proposition that *the vital object of nationhood can be attained only in proportion to a nation's relative wealth*. Such vital object is, now as ever in the world's history, defence against aggression from other nations. It is not necessary to enlarge on the horrors of war to the defeated nation, such as France in 1870-71. National security has become with each year a question more and more of wealth. Modern engines of defence can be constructed only over long periods, by the application of enormous capital thereto. The manhood

of a nation, though each individual were endowed with the strength and courage of a Hercules, would count as nothing for defensive purposes under modern conditions, unless aided by modern engines of war and trained to their use. Security has thus come to depend, primarily upon the possession by a nation of a sufficient proportion of the world's wealth, and secondarily upon the appropriation in times of peace of a sufficient portion thereof to efficient preparation for defence; and the most efficient defence will probably be prompt attack. In the evolution of nations the control of the civilised world has passed into the hands of eight competing powers. The enormous wealth required for efficient defence has forced all others to drop out of the race, and, with the exception of China, they exist now only as nations as buffer-states between the great powers, or as holders of strategic points, which, in view of its defensive interests, none of the great powers can permit to pass under the control of another. All the little kingdoms and governments thus exist only as such by the mutual jealousies and distrust of the eight great powers. Their wealth is insufficient to enable them to compete in modern methods of defence, and, if one great power subjected the others, most of such little kingdoms and governments would be swept away, and their territories absorbed by the conqueror.

As the continuance of the great powers, as such, depends thus upon their relative wealth, the important question arises, What are the true indications of the relative wealth of a nation? We have already shown in this chapter that, except complete products, all forms of capital other than natural faculties require amalgamation with natural faculties to evolve complete

products, i.e., to make effective the qualities which constitute them capital. It follows that, *ceteris paribus*, the relative capital of nations would be proportionate to their relative quantum of natural faculties engaged upon production. In other words, if similar conditions existed in all countries, their relative capital would be measured by population. As regards nations on similar planes of civilisation population is no doubt the principal indication of relative capital, and will become a more accurate gauge as the tendency to equality in the conditions of existence in diverse countries operates, but, under present mundane conditions, corrections are required as regards both relative capital and relative wealth.

1. In Chapter VIII of this book we noted the causes impeding free competition in natural average faculties, which had resulted in differences in the conditions of existence under which diverse races are willing to work and propagate, and differences in the relative efficiency of the natural average faculties of diverse races. The two differences we found to a great extent were related, so that, where the conditions of existence exacted by a race were superior, the efficiency of its natural average faculties was also superior. Each unit of such superior efficiency would necessarily co-operate with a larger quantum of other forms of capital in evolving complete products, and, as capital itself, would also be more valuable than the unit of a race of inferior efficiency.
2. Among nations approximately on the same plane of civilisation and efficiency, great differences exist in the nature of the productions on which the working population is mainly employed,

and in the quantum of productive-amalgamator's capital utilised per unit of natural faculties. In arable farming in a newly settled country, for example, the quantum of capital per unit of faculties would be much less than in a modern cotton or woollen mill. On the other hand, in countries populated to a degree calling for intense cultivation, mixed arable and pasture farming probably requires as much productive-amalgamators' capital as most manufacturing productions. An interesting and useful inquiry could be made into the relative proportions of productive-amalgamators' capital and of faculties in different industries and in different countries; it would aid in the solution of problems in economics at which we can now only guess. Such inquiry is, however, beyond the scope of the present book.

3. In gauging relative capital and wealth by population, correction is also necessary in respect of the proportion of the population whose faculties are directly consumed in immaterial services. A nation possessing a large number of wealthy capitalists would include amongst its population a large number of domestic servants, whose faculties would be directly consumed in ministering to the members of the wealthy families. Faculties so consumed represent only a small quantum of co-operative capital.
4. The amount of capital which the inhabitants of a country spend, when travelling abroad, in direct consumption of complete products, requires to be taken into consideration when gauging wealth by population. This capital, at the

will of the owner, could be expended in his own country, and would be in the event of national struggles, the results of which now depend so largely on national wealth. When spent abroad it increases *pro tanto* the population, i.e., faculties maintained in the country in which it is spent, and reduces in like degree the faculties maintained in the capitalist's own country.

Looking, in the light of these corrections, at the great powers in the van of civilisation, England, France, Germany, and the United States, there is not much difference *inter se* as regards the first correction, the conditions of existence under which the owners only of average faculties are content to propagate; as regards the second, the relative proportions of productive-amalgamators' capital to faculties, we have no sufficient data on which to found an opinion, nor, as regards the third, the proportion of faculties consumed directly in immaterial services; probably, in respect of both of these, the differences between any of the four nations are not great. As regards the fourth correction, the amount of capital expended abroad for direct consumption, probably the largest amount is spent by the United States, the next largest by England, the third largest by Germany, and the least by France. In this paragraph we are speaking only of England, i.e., the British Isles, not the British Empire. Within the Empire are enormous populations differing greatly in respect of all the four corrections cited from the inhabitants of Central and Western Europe and America. The determination of the relative wealth of the several nations does not fall within our definition of Cosmopolitan Economy; we have only referred to the countries named to illustrate our argument.

We have laid down above the two propositions, that national wealth is relative, not absolute, and that the vital objects of nationhood can be attained only in proportion to a nation's relative wealth. These lead to the inquiry: What are the indications of the relative progression or retrogression in a nation's wealth? From what we have said above it is obvious that the principal indication of progression in wealth is an increase of population. Such increase, especially in countries where facilities for emigration exist, indicates that an increased number of units of faculties are enabled to exist and propagate under conditions of life which are not deteriorating. A pressure of population upon the conditions of existence is soon indicated by a diminishing birth rate and by an increasing rate of emigration; in this country such pressure is also indicated by an increase in the number of paupers. To gather the general tendency it is, however, necessary to compare longer periods than consecutive years, so as to counteract the temporary effects of over- and under-production, which, as before stated, are an inevitable result of the manner in which the extent of the ultimate effective demand is ascertained. Where, apart from such temporary fluctuations, there is a marked increase in the population, it must indicate, not only that the capital of the country has been increased by the additional units of faculties, but that the other forms of capital, which make effective and are made effective by faculties, have also increased.

An increase of capital is, however, not necessarily an increase of wealth. At the beginning of this chapter we established that communital, i.e., national wealth comprised:

Aggregate individual capital *plus* communital capital, *minus*--

1. Communital liabilities ;
2. Legal rights *intra* the community ;
3. Individual liabilities *extra* the community.

Of the negative constituents (2) in this connexion can be disregarded, and also so much of (1) as might represent indebtedness *intra* the community. But if the communital liabilities *extra* the community and (3) the individual liabilities *extra* the community had increased to a greater extent than the individual and communital capital combined, products would have to be sent *extra* the community to discharge the hire-valuation thereon, and could not be available to support a larger population.

It is necessary to remember that capital and wealth include not only a productive-amalgamator's capital but also faculties. As an extreme example, let us suppose a country A, of which all the land and capital affixed to the land are owned by productive-amalgamators in B. In 1880 A was uninhabited, and, having no buyer's valuation, was not capital. Soon afterwards valuable minerals were discovered; the capitalists in B developed it, and in 1900 it supported a large population engaged in working mines and farms, of which the profits of the former and the rents of the latter, which prior to 1880 paid no rent, went to the capitalists in B. The wealth of A has become—

a (the capital value of the faculties of the workers)
plus b (the capital value of the mines and farms)
minus c (the liabilities to the capitalists in B),

and in the case supposed by the hypothesis
 $b = c$, so the increase in the wealth of A = *a*.

The capitalists in B cannot withdraw their capital; it has become affixed to the soil in A, and they can only receive for it a hire-valuation.

The capital so co-operating in the development of A has thus increased the wealth of both A and B.

Now let us trace the effect of this increase of wealth in B. The capitalists in that country will draw a large permanent income from A. Presuming them not to be misers, such income will be applied to the furtherance individually of their luxurious ease. This will involve (1) the employment of additional domestics and (2) the employment of various owners of faculties to manipulate the demanded luxuries. (1) will necessitate the consumption of more staples in B, and, if the lands in B be not worked to the economical point, its population will be further increased by the number of individuals necessary directly and indirectly to the production of the required staples. If B has to import such additional staples, the addition to the population necessary to such production will enure to C the exporting country. As regards (2), if such luxuries are produced in B, a further addition to the population will result calling for further production of staples; if such luxuries are imported, such additional demand for staples will accrue in the exporting country, say D. Thus the additional wealth resulting from the exploitation of A, and represented by the increased effective demand for the world's annual products, will be divided under the circumstances indicated between A, B, C, and D, and the benefit to each will be approximately measured by the extent of the consequent addition to the population in each of the four countries.

CHAPTER XII

INTERNATIONAL TRADE

No branch of Economics has been the subject of such ill-founded and misleading theories as international trade, and, in penetrating through the mass of mystifying deductions of closet philosophers, it is constantly necessary to recall the simple rules of arithmetic, which their theories claim to suspend. There is in fact no mystery about it, and the effects upon national wealth of national trading, i.e., the aggregate foreign trading of the individuals of a nation, are controlled by the same laws as the effects upon individual wealth of individual trading.

The leading error is based on J. S. Mill's fanciful theory of international values which, carried further probably than he intended, has induced a sort of belief, that all imports are necessarily paid for by exports and that, if the money value of a nation's imports be greater than that of its exports (including what are called invisible exports), the difference represents the nation's profit on the 'barter' or exchange. A nation's imports are no more necessarily paid for by its exports, than a productive-amalgamator's purchases are necessarily paid for by his sales. Both nation and productive-amalgamator can become poorer by their exchanges, can trench upon their wealth, and can ultimately drift

into insolvency. The invoice price of a productive-amalgamator's sales is all he will receive therefor; the invoice price of his purchases, whether more or less than his sales, he will have to pay. If the latter exceed the former he must provide the difference from some other source. Let us suppose that, like an outworker, he makes all his purchases from and sells all his products to the same man; if the price of his purchases be more than the price of his products, it will be useless to tell his creditor that all exchange is 'barter,' and that such creditor must therefore accept the small amount of sales in settlement of the larger amount of purchases. The creditor will exact payment of the difference, and the productive-amalgamator must provide it, either from some extraneous source of income or by entrenching upon his accumulated wealth. If he be forced to take the latter course, he is so much the poorer. The same principles must obtain whether the trader be an individual or an aggregation of individuals; whether such trader be one man, a partnership, a large company, or a nation.

The objects of a productive-amalgamator are to increase his wealth by his trading, and to increase it at a greater rate than his fellows. The objects of a nation's trading are the same, and, as its security as a nation from external aggression depends upon its comparative wealth, it is vitally concerned to increase its wealth at least *pari passu* with rival nations. We will first examine the phenomena of a productive-amalgamator's trading, and afterwards apply our conclusions to the trading of a nation.

In order to keep the analogy as closely as possible to that of a nation, we will suppose an established productive-amalgamator, A, possessing capital invested

in his business, and other capital producing hire-valuation invested outside his business. We will also suppose that he owes certain debts, which must be deducted from the valuation of his capital in order to arrive at his wealth, and that the necessities and luxuries directly consumed by himself and family are partly produced by himself in the course of his business, and partly purchased for direct consumption from other productive-amalgamators or from factors. *Pro hac* we will use the more familiar terms of 'purchases' and 'sales' in lieu of 'investments' and 'devestments' as defined in the fifth chapter of this book, and 'investment' and 'invested' we will use in their ordinary commercial sense.

Of such productive-amalgamator—

Let x = A's capital invested in his business at the commencement of any period,

y = A's capital producing hire-valuation, invested at such time outside his business,

z = the amount of debts at such time owing by A.

Then the total wealth of A at the commencement of such period is—

$$x + y - z.$$

Now x , it must be remembered, represents A's capital in his business in a state of rest, or rather with just sufficient surplus, in the form of working or floating stock, to start the business.

A has provided the necessary plant and other incomplete products in anticipation of the probable effective demand for his manufactures, and the money he will require to continue the evolution of his manufactures must be provided, not from x except to the small extent by which he may reduce his manufactured

stock, but from the continuous sale of the manufactures which, with the aid of x , he will continuously evolve.

A's possible purchases, outgoings and investments in the period fall into the subjoined ten classes; we will use the term 'wages' in its conventional sense to indicate the hire of human faculties. From A's point of view such faculties are purchases, but for the object of our analogy the distinction is necessary.

- a.* Purchases entering into the particular products which he evolves.
- a*₁. Wages, ditto.
- b.* Purchases for the purpose of maintaining his plant (part of x) at its original standard of efficiency.
- b*₁. Wages, ditto.
- c.* Purchases of necessities and luxuries for direct consumption by himself and dependents, in addition to the portion of his particular products so directly consumed.
- c*₁. Wages for immaterial services directly consumed by himself and dependents.
- d.* Purchases for the purpose of increasing the potential productivity of his plant.
- d*₁. Wages, ditto.
- e.* Investments, in addition to y , in capital outside his business as a productive-amalgamator, with the object of receiving in respect thereof a hire-valuation.
- f.* Hire-valuation on his liabilities (z).

So long as he continues his business as a productive-amalgamator, the only sources from which, without reduction of wealth, the capital necessary to these purchases, wages, and investments can be provided, and by

which therefore the amounts of such purchases, wages, and investments are ultimately limited, are—

- g.* Sales of the particular products which he evolves, *plus* or *minus* as the case might be, any temporary decrease or increase in working stock.
- g*₁. His particular products directly consumed by himself and dependents.
- h.* Hire-valuation of capital (*y*) invested outside his particular business; this may take the form of dividend (to use the commercial phrase) or of increase in the capital value of the outside investment.

If $g + h$ be not greater than $a + a_1 + b + b_1 + c + c_1 + f$ he will have no surplus to invest in *d*, *d*₁ and *e*. If $g + h$ be less than $a + a_1 + b + b_1 + c + c_1 + f$ he will probably first seek to balance the account by reducing *c* and *c*₁, but, if the difference be too great, he will be driven to—

- j.* Sales of capital (*y*) invested outside his business, and when that fund is exhausted to—
- k.* Reduction of *x* by failing to make the purchases and expend the wages falling under *b* and *b*₁.
- l.* Increase of *z* by borrowing.

Ultimately, *y* having disappeared, if *x* become less than *z*, A is insolvent. No jugglery with 'barter' can alter this. It is a question only of price and of simple arithmetic. If the price of $g + g_1$ be greater than the price of $a + a_1 + b + b_1$, A will make a profit; if less, he will make a loss. If the price of $g + h$ be greater than that of $a + a_1 + b + b_1 + c + c_1 + f$, his wealth is increasing; if less, his wealth is decreasing. *Primâ facie* it might appear that the question whether his wealth was

increasing would be determined by the fact whether he was enabled to pay the wages and make purchases and investments falling under d , d_1 and e , but that would not be conclusive, as such purchases and investments might be concurrent with reduction of y by means of j , reduction of x under k , or increase of z under l . A would generally be interested to keep secret the actual results of his trading, but, assuming him to be subject to the ordinary impulses of the race which we have investigated, we should be safe in concluding that a continuous expenditure under d and d_1 indicated that his business was profitable, that g largely exceeded $a + a_1 + b + b_1$, and that such excess of g was increasing approximately in the proportion that $x + d + d_1$ exceeded x . On the other hand, if there were no expenditure under d and d_1 , we should probably conclude rightly that the excess of $g + g_1$ over $a + a_1 + b + b_1$ did not exceed, if it equalled, the normal rate of hire-valuation on x . If A ceased manufacturing, we should probably also conclude rightly that $g + g_1$ was less than $a + a_1 + b + b_1$, and that A was sacrificing a large portion of x (represented by plant which would become a valueless incomplete product) in order to save the remainder. Necessarily in this last state, representing the sale and consumption without replacement of the stock of manufactured goods, $g + g_1$ would largely exceed $a + a_1$, while b and b_1 would be nil.

As regards A, the productive-amalgamator, therefore it appears that, disregarding temporary variations in working stock, an excess of purchases *plus* wages over sales may be coincident with—

1. An increase in wealth :

I. If after writing off g_1 there be a loss on the

business, but such loss $(a + a_1 + b + b_1 - g)$, *plus* hire-valuation on his liabilities (f) and his personal expenditure other than own products $(c + c_1)$, be less than his income from outside investments (h) .

- II. If there be a profit on the business and such profit $(g + g_1 - (a + a_1 + b + b_1))$ *plus* his income from outside investments (h) , though more than his personal expenditure $(c + c_1 + g_1)$ *plus* hire-valuation on his liabilities (f) , be less than the sum of such personal expenditure and hire-valuation added to his outlay on increased plant $(d + d_1)$.

In event I, the increase of wealth would probably find expression in additions to outside investments (e) ; in event II it would necessarily find expression in purchases for increasing productivity $(d + d_1)$.

2. A decrease in wealth:

- III. If there be a loss on the business $(a + a_1 + b + b_1 - (g + g_1))$ and such loss added to his personal expenditure $(c + c_1 + g_1)$ and to f , exceed his income from outside investments (h) .

- IV. If there be a profit on the business but such profit $(g + g_1 - (a + a_1 + b + b_1))$, added to his income from outside investments (h) , be less than his personal expenditure $(c + c_1 + g_1)$, *plus* f .

In both these events the decrease will find expression either in sales of outside investments (j) or in increased liabilities (l)

and possibly by failing (h) to make the necessary purchases under $b + b_1$.

On the other hand, similarly disregarding temporary variations in working stock, an excess of sales over purchases *plus* wages may be coincident with—

1. An increase in wealth :

V. If his plant has been profitably maintained ($b + b_1$) and the hire-valuation of his liabilities (f) be less than such excess *plus* his income from outside investments, i.e., if f be less than—

$$g + g_1 + h - (a + a_1 + b + b_1 + c + c_1 + g_1)$$

VI. If his plant has not been properly maintained but the decrease in its valuation added to f is still less than—

$$g + g_1 + h - (a + a_1 + b + b_1 + c + c_1 + g_1),$$

$b + b_1$ on this hypothesis represents the *insufficient* expenditure on his plant.

2. A decrease in wealth :

VII. The alternatives to V and VI; i.e., if under the supposed circumstances f be greater than—

$$g + g_1 + h - (a + a_1 + b + b_1 + c + c_1 + g_1)$$

As regards a productive-amalgamator therefore we may lay down the following conclusions:—

1. That, as regards increase or decrease of wealth, no final conclusion can be drawn from the relative amounts of sales on the one hand and of purchase *plus* wages on the other.
2. That, if his income from outside investments exceed the hire-valuation of his liabilities, he can expend the difference on purchases

plus wages in excess of sales without becoming poorer.

3. That an excess of purchases *plus* wages over sales can also be expended upon additional productive plant without reduction of wealth.
4. That, if the hire-valuation of his liabilities exceed his income from outside investments, unless he provide the difference from an excess of sales over purchases *plus* wages, he will become poorer, except that, if an amount at least equal to such difference have been expended upon additional productive plant, he may not necessarily be poorer, but must in such case either part with some of his outside investments or increase his liabilities, whereby the difference to be balanced by future excess of sales will be increased.
5. That his efforts as a productive-amalgamator will be directed to establishing conditions under which he can increase his sales profitably; apart from any excess of his income from outside investments over hire-valuation of liabilities, his potential wealth will increase *pro rata* with such increase of sales.

Now let us suppose that the productive-amalgamator's business be converted, under some equitable scheme, into a so-called co-operative concern, under which all the owners of faculties engaged in evolving the products, and to whom wages and salaries are paid, become partners and part proprietors. None of the foregoing conclusions will be at all affected thereby. The only difference will be that there will no longer be any expenditure under the heads of a_1 , b_1 or d_1 : such expenditure will be partly transferred to c and c_1 ; and

g_1 will be increased by amounts which, as sales to the employes, formerly fell under g .

Next let us suppose that the business be amalgamated with other concerns similarly constituted (either before or after its conversion into a co-operative concern), from some of which the productive-amalgamator has previously bought part of the materials required for his productions, and to some of which he has previously sold his products as the basis for further amalgamations of capital tending towards complete products. Still none of our conclusions would be affected. Items which formerly fell under a , b and d would now fall under a_1 , b_1 and d_1 , or, if the co-operative plan had been adopted, under c and c_1 , and g_1 would be further increased. If any of the outside investments of the original business were in shares in the amalgamating concerns, or if any of the liabilities were owing to such concerns, the respective capital and liabilities would *pro tanto* cancel each other, i.e., y and z would be equally reduced and x would represent the combined wealth. But all our conclusions would obtain equally in regard to the large amalgamated society, as to the original business.

Similarly, for the common objects of nationhood, we may regard the whole nation in relation to other nations as one amalgamated business, and the same principles as regards international trade obtain. Of course on this supposition we may suppose a condition under which g would disappear and all the products be consumed under g_1 , but in that case $a + b + c$ could not exceed $h - f$ without reducing the nation's wealth. If $h - f$ were nil, the nation could, to the extent only of outlay under $d + d_1$, purchase necessities or luxuries from outside without reducing

its wealth, and also, if f were greater than h , it would either have to reduce y , increase z , or else re-create g to liquidate the difference; in any case its command over a , b and c (which in regard to a nation would represent foreign products) must rise and fall with g .

We therefore lay down the following slightly modified conclusions as applicable to international trade, substituting imports for purchases *plus* wages, and exports for sales.

1. The objects of a nation's international trade is to increase its wealth, and to increase it at a greater rate than other nations.
2. That, as regards increase or decrease of wealth, no final conclusion can be drawn from the relative amounts of imports and exports.
3. That, if a nation's income (including increased capital value) from outside investments exceed in any period the hire-valuation of its liabilities, it can expend the difference on excess of imports over exports without becoming poorer.
4. That an amount equal to the excess of imports over exports can also be expended upon additional productive plant or additional complete products for slow consumption, without reduction of the nation's wealth.
5. That, if the hire-valuation of a nation's liabilities (i.e., other than to members of the nation) exceed in any period its income from outside investments, unless the difference be provided from an excess of exports over imports, the nation will become poorer, except that, if an amount at least equal to such difference has been expended upon additional productive

plant or additional complete products for slow consumption, the nation will not necessarily be poorer, but it must in such case either part with some of its outside investments or increase its liabilities, whereby the difference to be balanced by future excess of exports will be increased.

6. That a nation's efforts as an international trader should be directed to establishing conditions under which it can increase its exports profitably; *ceteris paribus*, its power of acquiring foreign products without reduction of its wealth, must rise and fall *pro tanto* with increases and decreases in its exports.

Some amplifications of the above propositions is necessary to explain their application to modern international trade. In the third proposition mention is made of 'a nation's income from outside investments.' As far as this refers to fixed capital and appurtenances thereto, such as a railway or a gold mine established in a foreign country, its meaning will be readily understood from what was stated in the last chapter (page 324). The capital exists in A country, where the railway or mine is situate; the railway or mine is owned by capitalists in B country and the annual profit is remitted to B, which is income from an outside investment in the terms of our proposition. It must be remembered, however, that, though the capitalists in B own the railway or mine and its fixed and loose plant and appurtenances, they thereby own only a small portion of the total capital necessary for the working of the railway or mine; the greater part of such capital consists of the faculties of the persons actually engaged in working the railway or mine, and

it is they who receive the greater part of the earnings of the railway or the product of the mine. For our purpose the entire railway or mine and the faculties of those engaged in A in working it would be regarded as the capital of A, and the remittance of the profit (which is vastly different from the gross earnings of the railway or the produce of the mine) to B, or the expenditure of such profits in A in increasing the invested capital, would be the hire-valuation of a liability of A corresponding, from the point of view of A, to f in our analysis of a productive-amalgamator's transactions. The profit received by B, or expended in A for the owners domiciled in B, corresponds in B to the productive-amalgamator's h .

As regards ships engaged in foreign trade the matter is more complex. In the Board of Trade returns of imports and exports of this country, ships built and delivered to foreign owners are now rightly included as exports. British owned ships engaged in foreign trade must also in part be regarded as exports; in so far as the freights earned provide wages and salaries for faculties employed in this country and profits for the owners, such amounts are income from outside investments corresponding to h ; but such freights also supply the fund for insurance, depreciation and obsolescence of such ships, and, so far as the annual expenditure in this country on British owned ships is necessary to make good the wear and tear, loss, and obsolescence of the country's stock of ships engaged in foreign trade, it must be regarded as an export for the purpose of our propositions. Further, so much money as is expended in this country for stores and refitting such ships must also be classed as an export. The like principles of course apply to other

countries engaged in foreign carrying trade; we have only referred to this country to illustrate our argument.

In relation to international trade we have introduced a term 'additional complete products for slow consumption,' which we omitted in our analogy of the productive-amalgamator; it exists in both cases, but its introduction in the last named case would only have needlessly complicated the issues. A typical example is a dwelling-house, the purchases for which might all be made in one year, while the consumption might extend over fifty or a hundred years.

A reference under this head is also necessary to the money expended in various countries by foreign visitors. When a man domiciles himself permanently in a new country, he necessarily increases the wealth of his new country by the amount of his own personal wealth, and if his income be drawn from his native country it becomes transferred to his new country, corresponding to an increase under the productive-amalgamator's *h*. Under the same operation falls the money expended by foreigners in a temporarily visited country; it affects the importing power of such country as income of the temporary resident from outside investments (*h*). A large proportion of the importing power of Monaco arises from this source. Money remitted as gifts, from friends and relatives in foreign countries, has the like effect.

A complication arises in relation to those countries producing the metals which are used for intrinsic money. As shown in Chapter IX, such metals tend to flow where for the time being intrinsic money is most urgently needed, just as the trucks owned by a railway company are sent where there is merchandise requiring transport. In this character, as the

vehicle of exchange, the consumption of the metals is small, represented only by the waste from attrition, and, as soon as a quantity of metal has operated one exchange, it is free to undertake another, in like manner as a railway truck, after it has carried one lot of merchandise, is immediately available for the transport of another. The import or export of bullion for this purpose is different from the import or export of products for consumption. It is, like the railway truck, not acquired for permanent possession, but for the time being earns hire-valuation where it is temporarily required. As soon as a brisker demand for intrinsic money arose elsewhere, it would tend to flow to the country which offered a greater hire-valuation.

But with some countries, such as the Transvaal, the base of intrinsic money is the main product, and the produce of the mines is for the most part at once exported, in exchange for products for immediate or proximate consumption, and in payment of hire-valuation of external capital invested in the country. Thus, while in a country such as England the movements in and out of bullion have little relation to the volume and direction of international trade, in the Transvaal and other similar countries, it is the main produce, and occupies an analogous position to that of cotton manufactures in this country or of agricultural produce in the United States.

In estimating the results to a nation of its export trade, it must be remembered that the exporting country is only benefited to the extent that the price of the exports represents capital inherent in such nation, consumed in the production of such exports and hire-valuation (whether wages, salary, profits, or

interest) on capital existing in the exporting country. This is specially necessary in reviewing the international trade of this country. About £80,000,000 in value of its exports represents imports re-exported. The net benefits to this country of such trade are—

1. Hire-valuation of the merchants' capital employed in the trade.

2. Wages, salaries, &c., involved in handling, packing, &c. This, of course, is apart from the freight if carried in British vessels, which is income from and partial sale of external investments, and applies to all exports. Ten per cent. is probably a full estimate of the amount of such hire-valuation, wages, salaries, &c., and the benefit of such export trade to this country would amount to about £8,000,000 only. On the other hand, the sale price of such exports as coal, locomotives, bicycles, watches, needles, &c., represents almost entirely capital inherent in this country, and wages and other hire-valuation of capital existing in this country, and, except as feeders to the shipping trade, the benefit to the country of the export of £8,000,000 of goods of the latter class would equal that resulting from the re-export of the whole £80,000,000 of imports.

This fact must be borne in mind in relation to such exports as cotton manufactures. In so far as the raw material cotton enters therein, the export of cotton goods is only a re-export, and the benefit to this country, with the exception as to freight above noted, is represented only by the added value resulting from the amalgamation of capital in this country with the imported raw material and other imports entering into the production of the cotton yarn and cloth exported. Confining ourselves to the raw cotton only,

we may calculate roughly the importance of the fact noted, when estimating the value of our international trade. In 1907 the exports of cotton manufactures were as follows :—

Yarns 241,000,000 lb. valued at £15,416,971.

Piece Goods 6,297,000,000 yards valued at
£81,049,207.

A yard of cotton cloth represents approximately 0·2 lb. of raw cotton used up in its production, and 1 lb. of yarn or thread similarly represents 1·14 lb. of raw cotton. The approximate weight of raw cotton entering into the above exports was therefore 1,534,140,000 lb. Pricing this at the average price of raw cotton in the year 1907, 7·0848*d.* per lb., it amounts to upwards of £45,000,000, so that the benefit to this country from its exports of cotton manufactures in 1907, subject to the exception noted above, was not in round figures £96,000,000, but £96,000,000 *minus* £45,000,000 or £51,000,000, and this amount is subject to further reduction in respect of imported oils, dyewares, &c., entering into the cotton cloth and yarn. The benefit of the £45,000,000 so deducted (subject to freight) pertains to the country where the raw cotton is grown, and this country is to that extent simply a conduit pipe, conveying from the purchasers of the cotton manufactures to the cotton growers, the reimbursement of the capital consumed and hire-valuation of the capital employed in the production of the raw cotton.

Further, inasmuch as this country grows only a portion of the staples necessary to the maintenance and depreciation of human faculties, and such staples are as absolutely consumed in the production of the goods exported as coal or oil in

working an engine, every British manufacture exported thus includes in its price a substantial portion, of which the exporter is the conduit pipe merely to convey the benefit to the country whence such staples are imported. This, however, applies only to such staples, i.e., to what is included under k and f in our seventh chapter (see page 219). If the price obtained for the exported goods repaid only the imported k and f consumed directly and indirectly in the production of such goods, no economical benefit from the trade would enure to the exporting country, which would simply convey the benefit to the country from which such staples were brought. Whatever in the price is included above k and f , under the supposed circumstances, enures to the benefit of the exporting country.

As laid down in the last chapter, it appears that the relative wealth of countries on the same plane of civilisation is *primâ facie* proportionate to their respective populations, and as stated above their respective wealth tends to increase, or be saved from diminution, by so much of their exports as represents value arising from the amalgamation of capital inherent in the exporting country. It therefore becomes useful to trace out the effect upon a country of the supersession of an industry by the capitalists of another country. This is a difficult problem amid the multifarious occupations of a manufacturing country, as the owners only of human faculties engaged in the superseded industry mayhap find occupation in similar industries which are progressive, and thus the effect may appear to be the destruction only of the productive-amalgamator's capital in the superseded industry.

That conclusion is, however, incorrect, as, in view

of the accumulations of money and debts seeking employment, of the actual restricted exercise of the sexual impulse in the civilised world, and of the existing mobility of human faculties due to the facilities of emigration, the faculties and other capital required for such similar industries would have been forthcoming, though there had been no supersession of the one industry; to trace the effect of such supersession the comparison should not be made between the *ante* and *post* conditions of a country where numerous industries exist, but between the *post* conditions and what would have been the conditions in the absence of such supersession. In order to isolate such effect it is necessary to imagine an island in which, beyond the production of its own staples, only one industry exists, carried on to a degree that it supplies all the needs of its own inhabitants for that particular product, and also the effective demand of a population, say four times as great as its own, in other countries. We will suppose that one-fourth of the population in the island is engaged upon the production of staples, one-half upon the production of the exportable product, and one-fourth consists of the non-labouring wealthy class and the agents of luxuries engaged, by direct services and otherwise, in ministering to the secondary impulses of those creating the effective demand therefor. From what is stated above it is obvious that, under these conditions, the island will have an import trade of non-staples approximately equal to the price of its exports, *plus* the net income received from external investments, *minus* hire-valuation on its international liabilities (if any), *minus* also any portion of its income left or sent abroad for investment. Advantages of site will have come into existence; fixed capital for the production

alike of staples and of the exportable product will have been built upon the soil, and houses and other products for slow consumption will likewise have been evolved. The value of the yearly usufruct of the island in staples, in exportable products, and in external income, after deduction of the amount required for government and defence, will be divided among the several capitalists (including owners of faculties) on the principles investigated in this book. On this scene comes the supersession of the export trade, by some of the means to which we shall shortly refer. The effects will be—

1. The cessation of the effective demand for all natural and acquired superiorities of faculties, engaged in the production and export of so much of the exportable product as had previously been sold abroad. The owners of such faculties will be driven, by resulting hardships, to choose between pauperism and emigration.
2. The cessation of so much of the import trade as equalled approximately the value of the previously exported product, and the alternative mentioned above to the owners of faculties engaged therein.
3. The destruction (under the head of miscalculation and obsolescence, see page 137 *et seq.*) of the greater part of the fixed plant engaged directly and indirectly in the production of the exportable product, including railways, canals, and the like created adjuncts to production.
4. The destruction, from the like cause, of a great part of the capital invested in products for slow consumption, such as houses, gardens, theatres, &c.

5. The destruction of a great part of the capital represented by advantages of site.
6. The cessation of the effective demand for the faculties of the greater number of the ministers to luxury, the owners of which faculties would also be driven to the alternatives of pauperism or emigration.
7. A great reduction consequent to the foregoing in the population, by emigration or by reduced birth-rate.
8. The consequent destruction of much of the fixed capital engaged upon the production of staples, and the cessation of the effective demand, with the alternative above mentioned, for the faculties of those engaged therein.
9. The weakening of the island's powers of defence, by the reduction of the population and the diminution of the means to pay for the costly material of war.
10. The probably greatly increased cost of the portion of the exportable product consumed at home, in consequence of the diminished intensity of production, which would further limit its production and intensify the preceding effects.

Effect No. 8 might be somewhat modified by the possible creation of an export trade in staples, through confining production to the more accessible sites. This might be possible on the above hypothesis, but would not be if the island were, in the pre-existing conditions, populated to the point at which it had become necessary to import some staples.

The possibility arises that, if the industry were destroyed, its place could be filled by another, but the

probabilities are against this, as, if such were practicable, there would have been nothing to prevent the development of such new industry before the old one had been superseded. If the island could not compete in other products with other manufacturing communities in the *status quo ante*, there is nothing in the supersession of the one industry which would give it the power.

The above effects are described on the supposition that the island continues to supply its internal effective demand for the particular product: if the industry be entirely destroyed, and the island has to import its requirements of such product, all the above effects would be intensified.

The creation in the island of an industry in a new exportable product would, *ceteris paribus*, necessarily have effects exactly contrary to those noted above.

The preservation and extension of existing and the creation of new industries is thus of supreme importance in the struggles of nations to attain that position of relative wealth, *inter se*, on which, under modern conditions, their existence as nations depends. To accomplish these ends many of them abandon the teachings of Cosmopolitan Economy, which, in the interests of the human race as a whole, would direct that everything should be produced where, from natural advantages, its production calls for the minimum amalgamation of capital; for necessarily that would tend to depopulate and destroy the nations less favoured by nature. Nations place their special interests, taught by Communital Economy, before the interests of the whole race, inculcated by Cosmopolitan Economy; just as individuals place their individual profit and advantage before the advantage of the community.

The means generally adopted by nations to preserve existing and create new industries is the enforcement of protective duties; the means adopted to extend existing industries is the payment of bounties upon exports.

We will first trace out the effect of protecting an existing industry. A country, which we will call A, has, we will suppose, hitherto supplied its own effective demand for a certain commodity entering into the production of staples or luxuries consumed in A. Another country B, from natural advantages, from advantages resulting from more intense production, or from the artificial stimulus of bounties to which we shall presently refer, is enabled to deliver the commodity in A at a price which recoups the valuation and hire-valuation of all capital amalgamated and employed therein by the productive-amalgamators in B, but such price will not similarly recoup capital amalgamated and pay hire-valuation, if the commodity be produced under the less favourable conditions in A. The cost of production in B we have shown (see page 350) is reducible to $k + f + n$, augmented by hire-valuation, at the most unfavourable site in B required to be utilised in B to meet the effective demand. Under these conditions, if left undisturbed, the production of the commodity in A will almost certainly diminish and ultimately cease, for the consumers there will only pay the price required by B; the owners of faculties in A will not reduce n , unless ultimately in common with all other owners of faculties engaged in all industries in A, and the owners of the capital co-operating with faculties in the industry will not maintain such capital at a rate of hire-valuation lower than that obtaining in B and other civilised countries,

for uninvested capital is essentially mobile. Shortly, the alternatives for A of not protecting the industry are—

1. A reduction in A of the rate of normal remuneration ($k + f + n$) in all industries, to the point at which A could produce the commodity as cheaply as B. This would happen only if the commodity entered preponderatingly into the total products evolved in A, and would be possible only if the causes impeding the free flow of faculties (see page 245 *et seq.*) were effective.
2. The destruction of the industry in A, involving all the tendencies enumerated above in regard to the destruction of the industry in the supposed island.

These results would be prevented by a sufficient protective duty upon the import of the commodity into A, and it remains to inquire whether there would result from such duty disadvantages to A, which outweigh the foregoing. In investigating the phenomena of international trade we are on the border between Cosmopolitan and Communital Economy, and in order to obtain a complete view of its problems we must cross the line. We do not intend to discuss the special circumstances and policy of any nation, but only certain general considerations which affect those nations engaged in international trade and mould their policy. We have already seen that the normal cost of products includes a proportion (see page 120) for the expenses of government which would be reducible ultimately to $k + f + n + \text{hire-valuation}$, being faculties and other capital otherwise dissolved in the production, i.e., expended for protection and other

governmental purposes. Some portion, however, of the sums paid in taxes can hardly be so classed, as, in the form of interest on and sinking funds for national debts, it represents hire-valuation on and redemption of liabilities incurred in building up the nation, not represented on the other side at the present time by any national assets, but constituting a charge on the individual capital of the nation. Every individual of the nation, not being a pauper, by direct or indirect taxation contributes alike to the defence and other governmental charges and to the payment of such interest—the owner of average faculties out of n , the owner of other forms of capital out of hire-valuation. We may thus consider n to be split up into three parts, n_1 contribution to defence and other governmental charges, n_2 contribution to hire-valuation on national liabilities, and n_3 portion remaining to be dealt with at the will of the owner. Similarly hire-valuation on other forms of capital, which for this purpose we will call o , is correspondingly divisible into o_1 , o_2 and o_3 . Let r equal the difference upon each unit of $k + f + n + o$ in A, between the price at which B can deliver the commodity and its normal valuation produced in A. A protective duty of r per unit would enable the productive-amalgamator in A to compete with B; the trade would then be divided and the results indicated above mitigated. A duty of s , being greater than r , would retain the whole production in A, subject to shortage of supply from time to time due to the causes before mentioned in this book. One effect of the imposition of s duty would be that the consumers in A would have to pay r (not s) more per unit, than if imported from B. Whether A as a whole would suffer thereby depends—

1. Upon the proportion for government and defence ($n_1 + o_1$) entering into $k + f + n + o$.
2. Similarly upon the proportion for interest on national liabilities ($n_2 + o_2$) entering into $k + f + n + o$.
3. Similarly on the proportion disposable at the will of the owners ($n_3 + o_3$) entering into $k + f + n + o$.
4. Whether staples entering into k and f are produced in A or imported.
5. Upon the effect of the price of the commodity upon the price of other commodities (if any) produced in A, into which it enters.

As regards 1, 2, and 3, if r be less than $n + o$ *prima facie* the advantages to A of a protective duty would be greater than the disadvantages. The alternatives, be it remembered, are pauperisation or emigration. If pauperisation followed the destruction of the industry, in addition to the destruction of productive-amalgamators' capital, a further portion of the nation's capital (the faculties of the workers) would also be destroyed as such, and the cost of maintaining them (k) would be thrown on the community.

If the industry were so destroyed and emigration resulted, A would be saved the future expenditure of k but would lose $n + o$. Dealing first with this loss: with regard to $n_3 + o_3$, by reacting upon and curtailing the other industries in A, the effect *pro tanto* would have the tendencies Nos. 4 to 9 indicated in the enumeration above of the effects of the supersession of an industry in our supposed island. With regard to n_1, n_2, o_1, o_2 , the effects would be more severe. The expenditure upon defence and many other objects of

government cannot be reduced though an industry be destroyed and the workers obtaining their livelihood therefrom emigrate. The preparations for defence necessary to the maintenance of a great power must be proportioned to the machinery for attack maintained by other great powers, and, in consequence, as regards $n_1 + o_1$, emigration, following the destruction of an industry, would load a considerable share of the burden formerly borne by those emigrating on those who remained. As regards n_2 and o_2 no reduction in the nation's burden could be made when the unwilling workman was forced by the destruction of his industry to emigrate, and the whole burden would have to be borne by those who remained. Thus the adverse effects of the destruction of an industry is felt, not only by those employing their faculties and other capital therein, but by the whole nation, and in every industry the proportions in which n_1 , n_2 , o_1 , o_2 enter into n and o respectively are increased; the balances n_3 and o_3 remaining for application at the will of the owners are reduced, and the condition of every class deteriorates.

The foregoing results are slightly overstated in respect of so much of the productive-amalgamator's capital as could be saved from the wreck of his industry; such salvage could be reinvested in external investments, and to that extent would prevent the complete loss of o .

It is no answer to say that these tendencies might not be effective, because the workmen might find employment in some other industry in A. First, it must be remembered that such employment would not avert the effects upon the capital consisting of incomplete products in the nature of plant, specially

constructed for the doomed industry; subject only to its realisable value as scrap, such plant would be completely destroyed as capital. But secondly, as indicated above, if the workmen individually found employment in other industries in A, they would only fill the places which would otherwise have been available for other workmen who would have been forthcoming, and the comparative state of the nation, i.e., compared with what it would have been if the industry had not been destroyed, would be as bad as we have indicated. By the increase of the population the burdens represented by n_1, n_2, o_1, o_2 would have been lightened, and the only difference between the two cases is that between an actual deterioration and the prevention of an attainable improvement; in relation to the objects of nationhood the latter is almost as serious as the former.

For a country which cannot find employment for the workmen deprived of livelihood by the destruction of an industry, emigration is preferable to pauperisation, but it is well to reflect, in view of the struggle for relative wealth among nations, how serious are the effects of such emigration. We have seen that, although a man's faculties can be owned in civilised countries only by the individual in whom they inhere, and are not susceptible of absolute divestment, such faculties represent an accumulated capital (and hire-valuation thereon) amalgamated during immaturity and apprenticeship. Economically the evolution of human faculties is exactly parallel to the manufacture of a productive piece of machinery, which takes several years to construct. If, when such piece of machinery is finished, there be no effective demand for the products to which it is adapted, the whole of the

capital amalgamated in its production (subject to valuation as scrap) is lost to the productive-amalgamator who evolved it and to the nation to which he belongs. When the owners of faculties are driven abroad by the destruction of the industry to which they are adapted, there is a similar loss to the nation of its amalgamated capital, but with two important differences: (1) there is no scrap value and (2) the capital amalgamated in the production and education of the workmen's faculties is presented without consideration to a competing nation. Economically the result is the same as if the productive piece of machinery above mentioned was not scrapped, but was presented, in full working order and carriage paid, to a competing productive-amalgamator in another country, which had succeeded in annexing the industry for which the piece of machinery was designed.

As defence is the primary object of nationhood, it must also be remembered that every adult male emigrant is a defender lost to the expatriating and gained by the adopting country.

We have now to consider the factors numbered 4 and 5 on page 351, which enter into the problem, and which tend to modify in some respects the foregoing conclusions. By 4 we stated that the answer to the question propounded was affected by the fact whether staples entering into k and f are produced in A or are imported. If such staples were produced in A and the workers in the supposed industry were pauperised, the effective demand for staples which had been applied to f by such workers would cease, and more owners of faculties, representing the producers of such staples, would be pauperised or forced to emigrate. The reduction in the demand for staples

would cause the abandonment of the less accessible agricultural sites, whereby the cost of production would be reduced, which would react upon the price of the unit $k + f + n + o$ in A. This would tend to reduce the price of the products of the destroyed industry in A, and might re-establish some portion of it in competition with B. If the workers in the destroyed industry were not pauperised but emigrated, the effective demand for staples which they had applied to k would also cease, and the foregoing effects would be intensified. If, however, A imported a large proportion of its staples such effects would be less intense. Unless the workers in the destroyed industry had consumed more than the whole imports of staples into A, there would be no producers of staples thrown out of employment, and the effect upon the price of the unit $k + f + n + o$ would be infinitesimal, for, when a country draws its supplies from the outside world, the sources of supply are so numerous and extensive that the cessation of part of A's supply would be a negligible quantity, and would probably be balanced by the increased demand from B, or from the other countries to which the expatriated workers from A emigrated.

The fifth factor entering into the problem is the effect of the price of the commodity upon the price of other commodities (if any) produced in A, into which it enters. The commodity evolved from the supposed industry might be an incomplete product required for another industry, of the products of which A consumed part and exported a large quantity, and, if the price of such incomplete product were maintained at the cost of production in A, the industry into which it so entered would, through competition

from other countries be destroyed, and the owners of faculties and other forms of capital affected thereby might be more in number and value than those affected by the destruction of the industry attacked by B. An illustration of this possibility was seen in the effects of the attacks upon the sugar refining industry in this country, by the bounty-fed sugar from the Continent. The British sugar-refining industry was almost destroyed, but concurrently a large industry developed in products into which sugar entered, sweetmeats, preserves, biscuits, &c. It is probable that, from the point of view of the British Isles alone, the sugar bounties were a benefit, but, as these islands are only in extent and population a fragment of the British Empire, a wider view was necessary to determine the effects of the bounties upon the wealth and future development of the whole empire. We, however, only use the fact to illustrate our argument; the further question would fall for consideration in the third branch of our subject—Communital Economy, with which we are not concerned in this book.

In the preceding argument we have treated the doomed industry in A as evolving its product for consumption in A only. If the product were one in which A did also an export trade, which was the hypothesis with regard to the supposed island in the former portion of this chapter, all the effects traced out above would necessarily be *pro tanto* intensified.

In view of the foregoing considerations, the advisability of any country protecting an industry must depend upon the particular circumstances of the country and of each industry calling for protection. Any universal policy of protection for every industry or of non-protection for any is, in relation to the

objects of nationhood, pedantic folly, comparable to a policy of identical intellectual and physical training for all men, weak and strong mentally and physically alike, or a policy of one treatment and panacea for all diseases. But, whether or not it be advisable for a nation to protect any industries, the sixth conclusion laid down on page 337 remains; the exports of the products of a nation's industry are generally the principal factor in increasing its wealth, and, unless temporarily by increasing its liabilities or by reducing its external capital, its purchasing power over the products of other nations will be limited by the total price of such exports, *plus* income from external investments, *minus* hire-valuation on external liabilities; further, just as a productive-amalgamator's progressive prosperity finds expression in an increase of plant, so a nation's prosperity finds expression in an increase of population, of course excluding paupers.

In pursuing these ends an important point arises in relation to a nation's purchases. When a country is populated beyond the point at which it can economically produce all its own staples (i.e., when the high cultivation necessary to produce the whole quantity it requires would raise the cost considerably above the cost of imported staples), it must import them so as to keep down the price of $k + f$; if, further, it has become a manufacturing nation, it will probably have to purchase many of the materials entering into its products which, if agricultural produce, it may not, from climatic, territorial, or other reasons, produce itself, and, if unreplenishing objects, it may not possess; also, if it be prosperous, its inhabitants, when disbursing n_3 and o_3 , may desire as luxuries and semi-luxuries many foreign products which it cannot produce. One

country C, let us suppose, has supplied to A, the purchasing nation, the bulk of the needed staples and other products at a lower price than that at which another country D can produce them, but has protected its own manufactures, so as to take in exchange as small a proportion of the products of A and as large a proportion of money and debts as possible. D has not similarly protected its manufactures and would apply the purchasing power, which it acquired by selling to A, in purchasing products evolved in A. Should A, in pursuing the objects of nationhood, continue to purchase at the lower price from C, or shut out C's produce by a differential duty and purchase from D? This problem differs from the one we have discussed as to the preservation of a threatened industry in A, but its solution is referable to the same principles.

Let t = the price of a unit of $k + f + n + o$ in A based on C's price for staples.

Let r = the difference on t between the prices of C and D respectively.

If A buy from C it will pay, in right to money, at the rate of t .

If A buy from D it will pay, in its own products, at the rate of $t + r$.

In the latter case, *ceteris paribus*, A will increase its population by the number necessary to evolve the products taken by D in exchange, and we have already pointed out the advantages, in view of the objects of nationhood, of an increase of industrial population. Since $t = k + f + n + o$, if r be less than $n + o$, it will be to the advantage of A to purchase from D any luxuries and semi-luxuries required for direct consumption in A, for there will enure to A's advantage (over and above $k + f$ for its increased population) $n + o - r$,

the whole of which would be lost if such luxuries and semi-luxuries were purchased from C. As regards materials required for its manufactures the same answer applies, so far as the ultimate products do not enter into the production of staples and are required only for direct consumption in A; but if A exports the ultimate products, each case has to be considered on its merits, in the light of what we have said above (page 355), in regard to the fifth factor in the cognate problem of the preservation of an existing industry.

As regards staples the problem is more complex. It must be remembered that our hypothesis relates to a country populated beyond the point at which it can produce all the required staples, at a normal cost equivalent to the price of imported staples. Staples are represented in t as $k + f$, and under such hypothesis they practically enter into all the ultimate products which A consumes or exports. The increase in the prices of luxuries and semi-luxuries consumed only in A, which impinges upon n_3 , may be borne by the whole industrial population of a country without increasing the price of the unit t , in the same way as an increase in n_1 and n_2 , which would reduce n_3 but leave n constant; o , which also enters into t , cannot ultimately be reduced or increased; the productive-amalgamator's capital sunk in an industry may, as we have shown, be lost, but uninvested capital (money or debts), which is necessary to maintain such sunk capital, has the world for its operations, and, if it cannot obtain the normal rate of hire-valuation in A, it will be transferred to another country. But neither k nor f , which are necessarily the larger portion of t , can be reduced, and, if the price of staples be increased through a differential duty shutting out the imports from C, such

increase will probably react upon t and thereby increase the normal price of all A's products. This may have the effect of increasing, to a point which destroys the trade, the price of products which A exports, and the imposition of a protective duty shutting out C's staples has therefore also to be looked at in the light of what we have said above in regard to the fifth factor.

Other factors, however, have to be considered before A can determine whether it be to its advantage to shut out the imports of staples and materials from C, for the benefit of D. D may possess natural advantages equal to those of C for the production of staples and materials, but the intensity of production in C, due in part to the exports to A, may be the principal cause of the existence of r . It may be demonstrable that, if the intensity of production in D be raised to the same degree as in C, r will disappear.

Further, the increased intensity of production in A, due to the exchange of its products for D's staples and materials, may immediately counteract the disadvantages of the increase in the price of k and f . The normal cost of all manufactures, we have seen, tends to decrease with an increase of intensity. Some manufactures (agricultural implements, &c.) enter largely into the production of staples, and, if D buy from A such manufactured products, which C shuts out, the reduction in the price to D, consequent on the increased intensity of production in A, would tend to reduce r . Also the increased population in A required to manufacture the products taken by D will increase the number of contributors to n_1 and n_2 , and the price thereof entering into t will be reduced and n_3 correspondingly increased. Moreover the intensity of production of all home products in which n_3 is expended

will be increased, and the normal cost thereof reduced.

The force of the foregoing arguments as regards A will be more apparent to men engaged in the actual problems of production and consumption if, in lieu of a country, we suppose A to be a large co-operative commercial business, such as we have indicated on page 335, and C and D productive-amalgamators, each prepared to supply the products required by A; the prices asked by C are less than by D, but C requires payment in cash, while D will take payment in A's manufactures, thereby increasing A's output. Business men we think will agree that they would in the circumstances act on the following principles:—

1. If the excess in D's prices were less than the profit made on the goods taken by D in exchange, they would buy from D.
2. If the excess in D's prices were less than such profit, *plus* the share of such fixed charges as would be constant whether they bought from D or C, they would still buy from D.
3. In estimating such profits they would take into account the reduced cost consequent on the increased output, which would result from D taking their products in exchange.
4. Even if the excess in D's prices were more than such profits *plus* such share of fixed charges, they would still have to consider the effect on the cost of their other products of the increased demand, which would result from the expenditure of the money earned by those who would be engaged in the manufacture of the products to be taken by D in exchange (our hypothesis on page 335 supposes a co-operative society

evolving most of the products 'which the co-operators directly consume).

5. The force of this last consideration would be weakened if the goods purchased from C or D were incomplete products entering largely into the cost of other products evolved by A, and sold at competitive prices to outsiders.
6. If A's purchases increased, so as to enable D to produce on as large a scale as C, *ceteris paribus* A would exact and D would accord a lower price for D's products.

Such are the principles which would guide a manufacturer merely from a profit-and-loss point of view; a nation, in view of national defence—the first object of nationhood—has also to take into account its growth of population relatively to that of other nations.

The only conclusion we wish to draw from the foregoing reasoning is that, in pursuing the ends of nationhood in regard to international trade, there is no single principle by which we can safely dogmatise, but that each country should weigh from its own point of view the relative advantages and disadvantages of the creation, protection, or destruction of each industry. Moreover the conditions necessarily vary from year to year, and a policy which may be to its advantage at one period may be disastrous at another.

Having regard to the secondary impulses of the race, it is obvious that a country, unless to discharge hire-valuation of its liabilities or unless solely inhabited by misers, cannot for a long period only export, any more than a group of individuals, unless all misers, can only sell. A group of miserly individuals, evolving all the staples for their direct consumption and all or most of the materials required for their products, could

sell such products, and, out of the price obtained, would pass over as a conduit pipe the price of the materials (if any) bought to the producers thereof, and could invest the balance in outside investments, the hire-valuation of which they could continuously reinvest. In this way they could accumulate until they ranked among the wealthy, with a power exerciseable at will over any of the world's products. A country can similarly grow wealthy by selling its products, buying nothing which it can produce, and investing in external investments the price of its exports less the price of materials and staples which it may be forced to buy. At some point, unless all the inhabitants were misers and willing to continue working and to forgo the gratification of the secondary impulses, which is improbable, the proportion of wealthy people and the mass of their wealth would be so large, that the workers in the community could not meet the effective demand for services and products. Then the country must begin to buy from abroad, but at that point it would have attained the main objects of nationhood; it could divert its wealth at any time to attack or defence, and the consequent diminution of demand for services and products would be acutely felt, not in the wealthy protected nation, but in the countries from which it drew its supplementary supplies of products. Necessarily the condition of a country would be precarious, whose industries were dependent on the surplus demand under such circumstances of other countries protecting the like industries.

Under the conditions embodied in the above hypothesis regarding the three countries A, C, and D, we may shortly consider the subject from the point of view of C and D. C has to weigh the advisability of

maintaining its protection against A's industries, in face of the threatened transfer to D of its trade in staples and materials. It will have to decide which will be the less evil—

- (a) To maintain the protection, and to suffer the effects of the contraction of production of staples and materials; or
- (b) To admit A's products, and to suffer the effects of the whole or partial destruction of the industries, in the products which it will have to import from A.

D, if a sparsely populated and undeveloped country, cannot be in doubt as to the wisdom of attracting the additional population necessary to produce the needed staples and materials. If D, though sparsely populated, be a partially developed country, with established industries of the same kind as A's, it will have to determine a similar but not identical problem to that of C above noted. In D's case, under the hypothesis, the question would be one of extension, not of maintenance or contraction of its production of staples and materials.

As stated above, some countries, not content with the protection of their industries, further stimulate them artificially by bounties on exports. The productive-amalgamators in the exporting country are in consequence able and willing to sell their products to other countries at a price less than the normal cost in their country by the amount of the bounty, i.e., if u be the amount of the bounty per unit, they will meet in other countries the competition of productive-amalgamators by selling on the basis of $(k + f + n + o) - u$. That will repay the productive-amalgamator in the exporting country, as he will receive u from his fellow-countrymen, and so obtain the normal cost of his products,

$k + f + n + o$. As regards the effect on his country, apart from his individual interest, it is obvious from our foregoing investigations that, if u be less than $n + o$, the bounty results in an economic benefit, and, even if u be greater than $n + o$, there may still be a balance of advantages to the country—

1. By increased intensity of production reducing the price of the unit $k + f + n + o$, in respect of the portion of his products consumed in the exporting country.
2. If staples are produced in the country, by the tillage of land to produce $k + f$ consumed by the faculties engaged on the exported products.
3. By the increased intensity of production in the home products on which n_3 and o_3 are expended.
4. For national defence, by the increased population resulting from 2 and 3 and from the employment of those engaged in the production of the exported products.

There are two principal methods by which such bounties are paid to the productive-amalgamator: (1) by a direct payment by the State out of its revenue from taxation, as with the continental sugar bounties, to which we have referred above; in such case the bounty is paid by the general body of tax-payers; (2) by what is known as the dumping system, whereby the bounty is paid by the consumers in the exporting country of the same kind of product. This latter method is more insidious and far-reaching in its effects, and calls for a fuller examination.

The advantages to a producing community of dumping flow from the conclusions drawn in the preceding

pages. Under conditions of intensity we have shown in our first book (page 50 *et seq.*) the advantages accruing from the use of automatic machinery, and we also pointed out that such advantages might be minimised or altogether lost if the machinery were not kept fully employed, as it represented an aggregate of units of intelligence which, as regards cost, had to be divided over the units of products evolved by such machinery. In this book, dealing with production under the institutions of private property and exchange, we found that productive-amalgamators investing their capital in such machinery would expect to receive therefrom, during its effective existence, the return of their capital so invested, *plus* normal hire-valuation.

We also found that two elements of dissolution—decay and obsolescence—would operate equally whether such machinery was wholly or partly employed or wholly unemployed. Taking one year as a convenient period of review, we thus see that there are three items of cost incurred by a productive-amalgamator, which will remain constant whether his output be full, partial, or *nil*, viz. :

1. Hire-valuation of plant.
2. Depreciation of plant.
3. Insurance against obsolescence of plant.

Furthermore, a considerable portion of the educated faculties which it is necessary for him to hire, are necessarily engaged on weekly, monthly, or yearly salaries, which remain constant whether the output be large or small. We have also pointed out the reduction in cost usually consequent on producing under intense conditions on a large scale, and also that productive-amalgamators have to work in the dark as regards the ultimate effective demand for their products. Now let

us suppose that two countries, A and B, each capable of evolving a particular product at the same cost, each under ordinary conditions of full work supplying its own effective demand for the product and supplying in competition one-half of the effective demand from other communities, either non-producing or not producing sufficient of the product for their own requirements. A, we will suppose, protects the industry, B does not. C and D we will suppose are groups of productive-amalgamators evolving the entire quantity of such product in A and B respectively, with identical plants, each at full work, giving equal output at equal cost.

Let a = 1 year's valuation of each plant.

b = 1 year's depreciation of each plant.

c = 1 year's insurance against obsolescence of each plant.

d = 1 year's irreducible salaries paid by C or by D.

e = number of units producible in one year at full work by C or D.

f = normal cost per unit in the producing country at full work, inclusive of normal hire-valuation of capital.

g = protective duty per unit in A.

h = number of units of the product consumed in A or B under the commencing hypothesis.

l = number of units supplied by A or B respectively under such hypothesis to other communities.

The selling price, under the supposed conditions, would be f : neither country could sell in the other, as the cost of transport would protect B, and the cost of transport *plus* g would protect A.

Now let us suppose that the supply overtakes the demand, so that the full output of C and D can no longer be sold. The competition will at first become more aggressive in relation to the supplies to other communities, where both groups are burdened with the cost of transport. But here for D the contest is hopeless, for they can only sell by reducing the selling price below $f + \text{cost of transport}$, and thereby working at a loss or earning less than the normal hire-valuation of their capital. C can similarly reduce their selling price but without the like consequences, as they can recoup themselves by increasing the selling price in A, so long as such selling price be less than $f + g + \text{cost of transport from B}$. Under the supposed commencing conditions let $l = \frac{e}{4}$, and then let the demand from such other communities fall to l , while k remains constant; the sellable output, which in the *status quo ante* was $2k + 2l$, will now be reduced to $2k + l$. Since $l = \frac{k}{3}$, if C reduce the price of the product to such other communities by n , they need increase the price in A only by $\frac{n}{3}$ to recoup the reduction and make the same profit as in the pre-existing conditions. So long as $g + \text{cost of transport from A to B}$ be more than $\frac{n}{3}$, they can thus be sure of driving D out of the market of such other communities, and of throwing on D the whole reduction (l) on the total output of the two producing countries.

This is only the beginning of the evil to D; under the pre-existing conditions in D there entered into $f \frac{a+b+c+d}{e}$; under the new conditions f will be increased by the difference between $\frac{a+b+c+d}{e-l}$ and

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$\frac{a+b+c+d}{e}$, and D must increase the price in B if they are to earn normal hire-valuation. But, if such increase in f be more than the cost of transport from A, C will increase their plant and begin to destroy D's trade in B. By so doing C will get all the advantages of increased intensity, and D will suffer the cumulative disadvantages of decreased intensity. Automatic machinery, which can be utilised by C, will not be available for D, and $a+b+c+d$ will, as regards cost, be divisible by a continually increasing denominator by C and a continually reducing denominator by D. In the end the industry in B will probably be destroyed, with all the consequences indicated in this chapter to productive-amalgamators and owners of faculties attendant on the destruction of an industry. Or, if not immediately destroyed, it will survive in a sickly condition, with the certainty that the whole consequences of recurring over-production in both A and B, instead of being shared by the two countries, will all fall on D.

CHAPTER XIII

SOME CONCRETE QUESTIONS IN COSMOPOLITAN ECONOMY

IN the working of the institutions of private property and exchange in civilised communities various concrete problems arise, some of which we will examine by the light of the conclusions drawn in this book.

1. *Trades Unions.* These affect the liquidity of the particles of Classes 5 and 6 of capital, viz.: Average Human Faculties and Acquired Superiorities of Faculties. Their *raison d'être* is to secure for such capitalists the fair hire-valuation of such faculties. They are phases in the continuous battle which is waged between owners of sites, productive-amalgamators, and owners of faculties as described in our seventh chapter, whereby the owners of faculties enforce for themselves a share in the improved productive results per unit of intelligence, attributable to increased intensity of production and to the continuous action of the inventive faculty. The object is legitimate, and the association of the units for combined action is necessary for its attainment. Unfortunately, through ignorance of economical science, in seeking their legitimate ends the several unions have inflicted, and are inflicting, damage to themselves, to the workers in other industries, to productive-amalgamators, and to their country.

We have shown, in the seventh chapter of this book, that the real struggle in the allocation of surplus products lies between the owners of sites and the

owners of average faculties. But their battle is not delivered directly, but through the productive-amalgamator, whom both of the combatants are continuously attacking. If the rate of profit of an industry rise for any lengthy period above the normal, the owners of sites appropriate the excess, either by the price enforced for the natural objects *in situ*, or for the valuation or hire-valuation of the sites where the necessary plant is erected, or they themselves become productive-amalgamators. On the other hand, the owners of faculties appear, from the action of their unions, to regard the productive-amalgamators as possessing inexhaustible funds applicable as the wages of faculties, and to believe that it is in the power and interest of the owners of faculties to force increases in their rate of wages, and to restrict the productivity per unit of faculties without limit. From the equation determining the value of x given on page 240 the following is derived:—

$$k + f + n = \frac{m}{\frac{p}{q} + px + o}$$

This, in ordinary language, means that normal remuneration ($k + f + n$), on the site reflectively determining normal remuneration for average faculties for the community, is equal to the gross produce on such site divided by the co-operating capital consumed ($\frac{p}{q}$), *plus* normal hire-valuation of the co-operating capital employed (px), *plus* the units of average faculties (o) operating the production of staples on such site. For the purpose of this equation the denominator $\frac{p}{q} + px + o$ would have to be reduced to terms of staples. Our preceding survey of valuations has shown how $\frac{p}{q}$ and px are so reducible.

As regards o , the valuation of a unit of average faculties can be determined theoretically in the same way as the normal valuation of a slave (see page 193 *et seq.*). The factors there discussed enter into the valuation of a freeman, except that a is no longer a fixed quantity, but is represented by $(k + f + n)$, i.e., normal remuneration. In the above equation, therefore, for o should be substituted $o(k + f + n) \left\{ \frac{(1+x)^o - 1}{x} \right\}$. This, however, would land us into algebraical complications, which we can pass by for the purpose of our present argument. It is necessary only to establish from the equation that normal remuneration on the determining site is, for the time being, the equivalent of a fixed quantity of staples, and that any increase or decrease in such quantity depends on certain extrinsic factors. The factors tending to increase, for the time being, the quantum of such remuneration are—

1. An increase in the gross quantity of staples (m) obtainable from the determining site.
2. A decrease in the capital value of the necessary co-operating capital (p).
3. A decrease in the normal hire-valuation of capital (x).
4. A decrease in the number of the necessary co-operating units of faculties (o).

Et converso, a decrease in 1 and increase in 2, 3, and 4 are factors tending to decrease the rate of normal remuneration.

As regards x , the normal rate of hire-valuation, we have shown that in civilised communities it is of cosmopolitan application, and if the rate of hire-valuation be forced down below the normal in one community, the supply of capital for productive-amalgamation will

be diverted therefrom to other communities where the normal rate obtains. Trades unions, therefore, whose powers are limited to one country, cannot, except for brief periods, increase the remuneration of their members by forcing the productive-amalgamators' profits below the normal rate. They could only do so by combined action with their class throughout the civilised world. But the depression of the rate of hire-valuation in one community induces only the cessation of fresh enterprise by productive-amalgamators in that community, whereby the ultimate loss to the owners only of faculties there domiciled, by diminished employment, would far exceed their temporary gain at the expense of the productive-amalgamators.

The increase of m and the decrease of o in the production of staples on the determining site depend, apart from climatic variations, obviously on the application thereto of the highest technical skill combined with the most effective implements, &c. (p). The technical skill would enter into o , i.e., the technic-amalgamators directing production on the site would, on the principles of normal valuation (see page 251), count as more than one unit entering into o , but thereby the total units entering into o required to produce m would be less than if o were not directed by such trained overseers; o would also be increased obviously if, by the action of a trades union, the units of o were prohibited from doing fair and continuous work, i.e., if such trades union limited the quantum of a man's work below what, without detriment to himself, he could accomplish, or if it compelled frequent and needless holidays. By thus increasing the denominator such trades union would necessarily reduce the value in staples of $k + f + n$ (normal

remuneration) throughout the community. The like effect follows from similar causes affecting the production of the necessary co-operating implements (p), which we may call more concretely steam-engines, ploughs, tillers, harvesting and threshing machines, coal, &c. If in the production of these, by the restrictive action of trades unions, more than the normally necessary units of faculties have been consumed, both p and $\frac{p}{q}$ would be *pro tanto* increased, and the rate of normal remuneration throughout the community diminished. We have mentioned (page 245 *et seq.*) the tendency of the civilised world to become one community economically, and also the existing retarding influences: the term 'community' used in this paragraph must be considered in relation to the state of the civilised world, the resultant for the time being of such tendency and retarding influences.

The following equation is also derived from that given on page 240:—

$$m = (px + \frac{p}{q} + o)(k + f + n)$$

We have mentioned above that o , the units of average faculties directly employed, can be reduced to staples, and conversely px and $\frac{p}{q}$ can be reduced to units of average faculties. We may therefore translate the above equation thus: The normal valuation of the gross products on the determining site is equal to as many units of normal remuneration ($k + f + n$) as are consumed in the production in (1) units directly employed (o), (2) other capital consumed ($\frac{p}{q}$), (3) normal hire-valuation on other capital employed (px). Inasmuch as all forms of capital tend to liquidity,

there will be a tendency for the above equation to become applicable to all industries in the civilised world, i.e., the normal valuation of the gross product in every industry concerned with multipliable products will tend to equality with the number of units of average faculties directly and indirectly consumed in the production multiplied by $\frac{m}{(px + \frac{p}{q} + o)(k + f + n)}$ on the

determining site. If the buyer's valuation of such products of other industries when evolved be less than the equivalent of the normal valuation so determined, the various forms of capital associated in such industry will forsake it; if such buyer's valuation be more, *e contrario*, capital available for investment will be attracted to it. Hence it follows that, if the quantities of o , px , and $\frac{p}{q}$ entering generally (i.e., not by the individual mistake or incompetency of a productive-amalgamator) into any product be artificially and unnecessarily increased, the community which directly and indirectly consumes that product, and not the productive-amalgamator, will suffer. In relation to o , the owners of faculties engaged directly on particular products by the action of their trades unions may and do procure undue rest and conditions of semi-indolence for their members, compared with those engaged in other industries, but, if temporarily at the expense and to the detriment of the productive-amalgamators evolving such products, the effects, ultimately, fall on the consuming community.

The pernicious policy of trades unions has been specially marked in relation to the production of coal, which, as an incomplete product, enters into nearly every product. In its production, apart from the

restrictions imposed by trades unions, the quantities of px and $\frac{p}{q}$ in relation to o are exceptionally large. In sinking pits, construction of surface work, driving levels and airways, the outlay in the nature of p is very great, and for some years px has to be added to such outlay before coal can be worked remuneratively. The rate of insurance against dissolution through miscalculation is also high, as the outlay may be rendered useless by faults, excessive water, &c., which cannot be foreseen. When a pit is in working order, the quantum of $\frac{p}{q}$ is very large. The levels, drifts, and airways, supported by timber, are consumed by pressure downwards of the roof and upwards of the floor, and must be continuously renewed. Usually also perpetual pumping is necessary to prevent inundation in the levels, drifts, airways, and pits. Nearly the whole of this continuous expenditure, falling under $\frac{p}{q}$, is required whether or not the product, coal, be obtained, and whether the quantities so obtained be large or small. In many industries the wear and tear of plant is proportionate to the quantity of the product; in coal mining such wear and tear, for the most part, has relation only to time, apart from the quantity of the product. It necessarily follows that if y tons of coal be obtained from a pit in any period, the cost per ton in respect of px and $\frac{p}{q}$ will be $\frac{px + \frac{p}{q}}{y}$; whereas, if $2y$ be obtained in the like period, the cost per ton in respect thereof will be reduced by one half.

Now the policy of trades unions in this country has been so fatuous that, at times when coal has been

difficult of sale, and the price, in consequence, has fallen so low as to leave little or no profit to the productive-amalgamator, they have further hampered him by compelling a reduction on the weekly output, thereby increasing, as explained, the cost per ton in respect of px and $\frac{p}{q}$. Coal enters, as before stated, into nearly every product, and particularly into iron. Each ton of iron produced represents roughly the amalgamation therein of three tons of coal. Iron products are sold by the productive-amalgamators of this country in keen competition with those of Germany, United States, and Belgium. Yet these foolish leaders of unions, when the supply of coal has been found to exceed the demand, have by such reduction of output further reduced the demand, by so increasing (through coal) the cost of iron products in this country as to make their continued production impossible in competition with those of the countries named.

We only give coal as an illustration; nearly every trade controlled by trades unions has been similarly hampered. We may mention, especially, the glass and engineering trades, the latter by the 'ca' canny' policy, and by opposition to labour-saving machines which have been adopted by competing countries.

2. *Co-operative Production.* In order to prevent this mutually harmful opposition of owners of faculties and productive-amalgamators, various methods of what is called co-operation have been devised, but, with few exceptions, these have not been generally or permanently successful. Such schemes have been framed with the legitimate object of interesting the owners of faculties, as well as the productive-amalgamator, in the profits resulting from the amalgamation. But, if the conclusions drawn in this book

be correct, the principles on which nearly all such schemes have been founded are illogical and unfair, and the co-operation was foredoomed to fail. The co-operating workman has expected the one-sided bargain, that he shall share in profits but be indemnified against losses, i.e., that he shall receive the whole normal remuneration ($k + f + n$ or as many units thereof as his skill justifies) of his faculties, and some share of the productive-amalgamator's profits, if he make any, in addition. But if the productive-amalgamator make a loss, or if his profits be not equal to normal remuneration on his capital, the co-operative workman is not willing to share the deficiency by deduction from his normal remuneration. It follows, from the reasoning in this book, that, when a productive-amalgamator has paid remuneration based on $k + f + n$ to the owners of the amalgamating faculties, he has already paid them their share of profit, and if the whole amalgamation be at his risk, the whole market valuation of the resulting product belongs to him. If he make the one-sided bargain of allotting a share of the profit (in addition to n previously paid), when there is such profit, to the owners of faculties, while bearing the whole loss himself, when such loss occurs, it is obvious that he is hopelessly handicapping himself in competition with other productive-amalgamators, who do not adopt this kind of co-operation.

If the analysis in this book of the problems of production be correct, there is no insuperable difficulty in constructing industrial or co-operative partnerships on equitable bases, whereby the net gain resulting from the sale of the product may be fairly divided between all the units of capital amalgamated in the production. We have demonstrated that all forms of multipliable

capital are resolveable into units of normal remuneration ($k + f + n$), which are reducible to terms of staples; also that, as stated above in this chapter (page 372), the normal valuation of a man possessing average unskilled faculties can be determined on the basis of $(k + f + n) \frac{(1+x)^b - 1}{x}$, which can also be expressed in staples or in their normal price.

Similarly, the productive-amalgamator's capital is reducible to the same terms. Reverting to page 350, it will be remembered that it became necessary to split up n into n_1, n_2, n_3 , representing respectively (1) contribution to defence and other government charges, (2) contribution to hire-valuation and redemption of national liabilities, and (3) portion remaining to be dealt with at the will of the owner. And in like manner o , which there stood for hire-valuation of other forms of capital, was divided into o_1, o_2, o_3 . Resolved into these elements the equitable distribution of the balance resulting from the sale of the product is obvious. After reimbursing the cost of all materials consumed, depreciation, repairs, rates, taxes, and $k + f + n_1 + n_2$, in respect of wages, the ultimate balance should be divided rateably between the employés and the productive-amalgamator, according to the capital valuation of the former and the normal valuation of the capital of the latter invested in the industry.

We will illustrate this by the cost sheet of pig-iron production given on page 119. It will appear clearer to translate the principles above enunciated into figures, and we will therefore adopt the following hypotheses:—

1. That the product of pig iron and castings was sold for £3 12s. 6d. per ton.
2. That the item of office and general charges

£25 12s. consisted of £5 12s. for stationery, &c., consumed, and £20 for office salaries and wages.

3. That the wages and salaries in the works and offices representing $k + f + n_1 + n_2 + n_3$, are divisible thus :

$$k \frac{3}{10}, f \frac{3}{10}, n_1 + n_2 \frac{1}{10}, n_3 \frac{3}{10}$$

4. That the aggregate of the productive-amalgamator's capital engaged in the industry amounted to £25,000.
5. That the capital value of the faculties co-operating with the productive-amalgamator's capital amounted to £35,000.

If the owners of faculties be regarded in the manner indicated as partners in the production, the amount realised from the sale of the product would be applied in the following priorities :—

- 1st. The payment for the materials and faculties purchased outside the partnership.
- 2nd. The payment of k .
- 3rd. The payment *pari passu* of f and of repairs and depreciation of plant.
- 4th. The payment *pari passu* of $n_1 + n_2$ and of rates and taxes.
- 5th. The balance would be divided *pro rata* between the productive-amalgamator's capital (£25,000) and the capital value of the co-operating faculties (£35,000).

In figures it would work out thus :

RECEIPTS.

	£	s.	d.
617 Tons @ £3 12s. 6d.	2,236	12	6
Less—			
Bad debts, 617 tons at 8d.	20	11	4
Castings used	7	10	0
	<hr/>		
	28	1	4
Carried forward	£2,208	11	2

Brought forward - - £ s. d.
2,208 11 2

PAYMENTS IN ACCORDANCE WITH PRIORITIES—

1. Materials and faculties outside the partnership—

	£	s.	d.
Coke	953	12	0
Ironstone	672	1	0
Limestone	93	15	0
Stores	19	5	0
Royalty	30	17	0
Selling commission	20	11	4
Stationery, &c.	5	12	0
	<hr/>		
	1,795	13	4

412 17 10

2. k being three-tenths of (£185 13s. 4d. + £20) 61 14 0

351 3 10

3. f (same amount as k) 61 14 0
Repairs and depreciation 85 0 0

146 14 0

204 9 10

4. $n_1 + n_2$ being one-tenth of } 20 11 4
£205 13s. 4d. }
Rates and taxes 10 5 0

30 16 4

Balance divisible *pari passu* between £35,000 }
and £25,000 being seven-twelfths to } £173 13 6
faculties and five-twelfths to productive-
amalgamator }

This would give £101 6s. $2\frac{1}{2}d.$ to the owners of faculties and £72 7s. $3\frac{1}{2}d.$ the productive-amalgamator.

By this scheme the amount paid to the owners of faculties would be—

	£	s.	d.
k	61	14	0
f	61	14	0
$n_1 + n_2$	20	11	4
Share of profit	101	6	$2\frac{1}{2}$
	<hr/>		
Total	£245	5	$6\frac{1}{2}$

instead of £205 13s. 4d. as per cost sheet. The profit of the productive-amalgamator under existing methods would be £111 19s. 6d., and under the suggested co-operation £72 7s. 3½d. If we suppose the product of the furnace to have realised £3 8s. per ton only, the balance divisible between the two classes of capital would be £34 17s., of which £20 6s. 7d. would fall to the share of the owners of faculties and £14 10s. 5d. to the productive-amalgamator. The owners of faculties would then receive £164 5s. 11d. instead of £205 13s. 4d. under existing methods, and the productive-amalgamator would receive £14 10s. 5d. instead of suffering an absolute loss of £26 17s.

Other industries would adapt themselves better than a blast furnace to the suggested co-operation, as the proportion of materials purchased from outside capitalists, constituting a first charge on the product, would be less, and the proportionate value added to the product by the participating faculties would be considerably more; a fall in the market valuation of the product from £3 12s. 6d. to £3 8s. would not in such industries cause such a great difference in the co-operators' profits. The two industries cited in the foregoing section, collieries and engineering works, call especially for complete co-operation between all classes of capital amalgamated in the product. A few weeks' experience of the results of a forced reduction in the output of a colliery, if the workers were directly interested in the financial results in the manner suggested, would cure them for ever of that folly. Similarly, the 'ca' canny' policy in an engineering works would never be heard of, when the delinquents' fellow-workmen realised that it was carried out mainly at their cost.

The introduction of co-operation on the lines suggested would involve the determination of the following points:—

1. The normal valuation in money of the units k, f, n_1, n_2 , respectively.
2. The normal valuation in money of a unit of faculties, i.e., of an average unskilled man.
3. The valuations in units of faculties of the various kinds of acquired superiorities of faculties.

These problems, on the principles enunciated in this book, do not appear to present insuperable difficulties. The main difficulty would arise with No. 3, but that is solved practically now, in the relative wages paid to unskilled and to the several grades of skilled labour. It would probably be more easily and equitably determined under the proposed co-operation than under existing methods; for, whereas at present the whole body of men are banded against the productive-amalgamator, under the suggested new conditions each man would be concerned to see that, while he was fairly rated, no one else was overrated. A number of units would also have to be assessed for the valuation of the proprietor's faculties, or of his deputies in supervision and management, but it seems reasonable to expect that, under the proposed co-operation, the cost of supervision would be greatly reduced, for each workman would be personally interested in seeing that his fellow-workmen did not 'slack.'

For the purpose of relative rating the figure 100 might be taken to represent the unit of unskilled labour, which would allow of ready grading above and below—above for those with acquired skill, below for boys, women, and men in declining years. In lieu of

increases and decreases of individual wages forced on or by the productive-amalgamator, the individual grading would be raised or lowered, and, as the men as a body would be affected thereby, a representative council of the men would necessarily consult with the productive-amalgamator in fixing and altering the gradings.

With collieries and iron furnaces the trading results can be practically determined by cost sheets weekly. In many other industries they can only be ascertained when stock is taken, usually annually. In the latter cases the ultimate shares of the several co-operating capitalists could not be calculated until the annual trading account, based on the stocktaking, was completed, but approximate calculations would allow of interim payments on account of ultimate profits. Unless the proposed co-operation was universally adopted in any industry, a portion of the profits to which the co-operating workmen were entitled would of course have to be retained for a time as caution money, otherwise they would necessarily work on the proposed co-operation when profits were large, but seek employment with masters continuing the existing methods when profits were small.

Practice has outpaced theory in regard to the suggested co-operation; in some branches of the fishing industry, particularly trawling, the market valuation of the produce is divided roughly on the principles enunciated above.

3. *Taxation.* The conclusions drawn in this book point to advantages of site as the natural source from which the public revenue should be derived, or rather as a class of capital which should be retained for the benefit of the whole community, and not be appropriated

permanently by individuals. It owes its existence as capital to the formation of the community; *ceteris paribus*, it increases with the increase of the community; its maintenance depends on the continuance of the community, and its buyer's valuation is largely dependent on the security enuring from the expenditure of the community on measures of defence. All forms of capital, except advantages of site and amalgamations affixed to the soil, are more or less transportable, and independent of the continuance of the community. As explained in this book, advantages of site tend to appropriate all surplus products in excess of the rate thereof producible on the least accessible sites necessary to supply the existing effective demand. While its existence is thus necessary as an equalising factor for other capitals, it is a communal creation, and ought to be applied in giving back to the community what, for equalising purposes, it collects. In any new community the alienation of lands, except for limited periods, should not be permitted. The State should be the ground landlord, and, subject to the creation of limited interests, such as building leases, which favour the development of the property of the community, it should not alienate; and at the termination of such leases should resume full possession.

But in most civilised countries private ownership of land has existed too long to be abolished, without committing violent wrong. The laws have permitted the sale of land, and thus large quantities have been acquired by purchase by men who have acquired the necessary funds by their own skill and industry as productive-amalgamators, or by saving portions of the hire-valuation of their faculties. They have made such purchases in reliance on the laws of the country, and

to confiscate property so acquired would be simple robbery. It is, however, arguable whether the future should always be thus mortgaged to the owners of sites. No wrong would be done by converting the interest of such owners into a rent-charge based on the present hire-valuations, and subject thereto, transferring the lands to the State to be dealt with for the benefit of the community. The future accretions from advantages of site would thus revert to the community which creates them, and, as the community and its governmental expenditure increased, there would be an increase probably *pari passu* in this revenue, which would press on no one and injure no industry.

If such step were now taken, however, in any thickly populated country, it would be many years before the accretions to the advantages of site beyond their present-day values would provide a sufficient revenue, and taxation is therefore a necessity. We enter here upon a wide and complex inquiry beyond the purview of this book, and we must be content with laying down certain principles to which the conclusions drawn in this book point. We are not here concerned with protection, which we have already discussed, and the main object of which is not revenue but the exclusion of certain imports and the fashioning of a weapon with which to fight other nations in the struggle for comparative wealth; and if exclusion of imports result from protection, the direct revenue therefrom is *nil*. But, as the necessity exists for raising revenue by taxation, it behoves us to examine in what way such revenue can be raised, so as to forward as much or retard as little as possible the objects of nationhood.

The main object of nationhood is defence, and this

we found, in these days of costly implements of war, resolves itself from an economical point of view into a question of comparative wealth. Skill, courage, and fortitude are necessary, the first more than ever, but *ceteris paribus*, the most wealthy nation can become the most powerful alike for offence and defence. We also found that, with nations on the same plane of civilisation, their comparative wealth finds its most accurate expression in the relative population.

Capital of all the classes enumerated on page 112, if earning its hire-valuation in any form, must necessarily be concerned with either production or consumption. It may lie dormant, by the voluntary act of its owner, as gold hoarded and hidden (not banked) by a miser or intentional abstention from work by a 'loafer'; in such cases it does not earn hire, and is concerned with neither production nor consumption, but it has the power of claiming its hire at any time by entering into the economic circle of the community. Frequently, too, capital lies dormant through miscalculation, as when invested in acquired superiorities of faculties, plant, or other complete or incomplete products in excess of the effective demand. But active capital is either concerned with production or invested in complete products (such as houses, faculties of servants, &c.) for slow consumption. The demand for faculties, and therefore for population, arises mainly from the following sources:—

1. For the production of products for direct consumption in the community.
2. For the production of products for consumption *extra* the community.
3. For immaterial services required by capitalists earning hire in the community.

4. For immaterial services required by capitalists earning hire *extra* the community.

The last two sources represent the demand for domestic servants, &c. In this country, to a larger extent than any other, faculties are also employed in connexion with the handling of products imported to be re-exported, but even here the demand arising is a negligible quantity compared with the four sources enumerated. It is obvious that, in pursuing the objects of nationhood, i.e., the increase of all forms of active capital, taxation should be arranged so as to avoid increasing the cost of production falling under heads 1 and 2 above, as otherwise the productive-amalgamators are handicapped in competition with other producing nations, and the increase of the nation's capital, both productive-amalgamators' and faculties, is prevented or retarded. The profits, if any, remaining after the product is sold are a suitable object of taxation, and, if the system of co-operation advocated in the preceding section were generally adopted, a universal income tax would be a fair, convenient, and inoppressive means by which a considerable part of the public revenue could be raised. The tax, as regards industries, would be assessed on the surplus remaining after the cost of all materials consumed, depreciation and $k+f$ had been repaid, and would thus be a *pro rata* deduction falling on the hire-valuation earned by all forms of capital concerned in the result of the production. Reverting to the calculation given on page 381, the amount to be assessed would be £204 9s. 10d.; productive-amalgamators and workmen alike would thus be equitably treated, while the industry would be unhampered in relation to foreign competition. It will be long, however, before our

productive methods are likely to be reorganised in the way suggested, and we have therefore to consider the principles which should guide fiscal policy in actual conditions.

Obviously anything which tends to increase the cost of $k + f$ should, if possible, be avoided, and therefore any policy which prevents the cheapest available supply of the necessities of life is *primâ facie* harmful. The effects of an increase in the cost of staples is far reaching and insidious, for it reacts on the cost and maintenance of all productive-amalgamators' capital invested in the plant, implements, &c., necessary for future production.

This principle is absolute from the point of view of Cosmopolitan Economy, but it marks a point at which Cosmopolitan Economy and Communital Economy often clash, and we have already indicated a state of affairs (see page 359 *et seq.*) in which it might be to the advantage of a nation, in the struggle with fiscal weapons for relative wealth, to impose conditions on the free import of staples.

The arguments against the taxation of $k + f$ are of full force against the taxation of productive-amalgamators' capital. Such capital is mainly an aggregation of $k + f$, wisely invested to give to future production all the cumulated advantages which have accrued from the past exercise of the inventive faculty, and any direct tax thereon hampers competitive production, in the same way as an artificial increase in $k + f$. In this and other countries this fact is disregarded. Whatever capital a productive-amalgamator invests in business premises and fixed plant is immediately subjected to local and imperial taxes, without regard to the fact whether or not such premises and

plant produce a profit to the productive-amalgamator. The local rates in this country range from 6s. to 10s. in the £ on the annual value, and the income tax at the present time is 1s. in the £. Thus a productive-amalgamator, who invests his capital in aids to production, has forthwith to pay yearly to the State from 35 to 55 per cent. of the normal hire-valuation of such capital. The exaction of such a penalty is egregious folly in relation to the nation's economic progress; its effects are the same as a customs and excise duty of the like percentages on the necessities of life. The harmful results are, in some degree, modified by the reaction of the tax on the valuation of advantages of site, but such modification is slow and almost imperceptible, and, if a productive-amalgamator contemplate an improvement on any business site in which he has acquired a limited estate, he knows that he will be immediately subjected to the exorbitant penalty on the annual value of such improvements without recourse against the owner of the site. It is difficult to imagine any policy more calculated to frustrate the attainment of the objects of nationhood.

The details of taxation are beyond the purview of this book; they would fall for examination in the next branch of Human Economics—Communital Economy—when the circumstances of each country would have to be reviewed. From the point of view of Cosmopolitan Economy the foregoing considerations lead us to lay down that, under existing conditions of production and apart from the necessity of a defensive fiscal policy against other nations, the following should be the main sources of taxation revenue:—

- (1) Advantages of site.

- (2) Houses, above a fixed hire-valuation per head of inmates.
- (3) Articles in the nature of luxuries for direct consumption by the members of the community whether produced at home or abroad.
- (4) Immaterial services directly consumed.

4. *Fiscal Reform.* This question properly belongs to the third of our divisions of Human Economics, Communital Economy, which combines with the factors of Natural Economy and Cosmopolitan Economy the particular conditions attaching to each separate nation or community, so as to deduce the policy best suited to the maintenance and advancement of such nation or community. Fiscal policy is, however, of such vital importance to this country at the present time, that we shall hope for excuse in shortly discussing it by the light of the principles enunciated in this book.

The primary object of nationhood we have stated to be security assured by adequate means of defence, and the attainment of this for the great nations of the world is mainly dependent on comparative wealth. The defence and continued existence of the British Empire as a combined whole must depend upon its naval preponderance. Extending round the globe, with a fraction only of its territory and population comprised in these islands, the seas and oceans of the world are its military roads, and their control by another nation would be as disastrous to this empire as, to the French, the possession by a hostile nation of the military roads leading from Paris to the provinces. Naval preponderance is mainly a question of comparative wealth, and we may lay this down as an axiom, that, whenever the wealth of another nation enables it

to maintain a naval force equal to or greater than that of the British Empire, the dissolution of the latter, and the degradation of these islands and of its colonies to the position of little nations, existing, like Holland, Belgium, and Servia, on the sufferance of the Great Powers, is certain.

The cost of maintaining the naval power of the empire, under its present constitution, is practically borne entirely by the inhabitants of these islands. For thirty years past the country has followed a fiscal policy, founded upon principles directly opposed to those adopted by the other Great Powers, and the first point to be determined is the comparative progress in the period of this country and of other Great Powers which have adopted the contrary policy. If our relative progress in wealth has been greater than theirs, our unique policy is justified; if theirs be greater than ours, it is time for us to seek the cause as a matter threatening in the future, for the reasons stated, the existence of our empire.

We will adopt as a postulate that the British Empire is worth preserving. We admit that, if it could be demonstrated that its dissolution would tend to the economic benefit of the human race as a whole, we are not sufficiently cosmopolitan to contemplate it tranquilly. Writing as an Englishman primarily for Englishmen, we are now stepping over the barrier to consider a vital question, from the point of view only of the Communital Economy of the British Empire.

In reviewing the relative results of our so-called Free Trade and of Protection, we will make the comparison with two exponents only of the protective policy, Germany and the United States. These are the

only nations which seriously threaten at the present time our naval supremacy; one of them, Germany, is an old country, the other, the United States, at the commencement of the period which we shall review, comparatively a new and partially settled country. We shall thus see the effect in both classes of nations of the fiscal policy opposed to our methods. A convenient year from which to date our examination is 1880, as in the previous year Germany definitely adopted an aggressive protectionist policy; the United States, both before and since that year, has followed a like policy.

On the basis of our conclusions in the preceding chapter, if success has attended the protective and dumping policies which Germany and the United States have directed against this country, it would be manifested by the following results:—

1. A proportionately greater reduction or proportionately less increase in their manufactured imports.
2. A proportionately greater increase in their exports of domestic produce and manufactures.

The following calculations are based on the 'Memoranda Statistical Tables and Charts' presented to Parliament by the Board of Trade in 1903 and 1904.

1. Imports (in sterling).

A. United Kingdom (articles wholly or mainly manufactured less re-exports).

	£	
1880	62·8	millions
1902	115·1	„

Increase 52·3 „ equal to 83 per cent.

B. Germany (imports of manufactured goods for home consumption).

	£
1880	39·1 millions
1902	55·5 „

Increase 16·4 „ equal to 42 per cent.

C. United States (imports of manufactured goods for home consumption).

	£
1880	55·9 millions
1902	76·3 „

Increase 20·4 „ equal to 36 per cent.

2. Exports of domestic produce and manufactures.

A. United Kingdom (excluding ships).

	£
1880	196·9 millions
1902	221·7 „

Increase 24·8 „ equal to 12½ per cent.

B. Germany.

	£
1880	144·8 millions
1902	233·9 „

Increase 89·1 „ equal to 61 per cent.

C. United States.

	£
1880	171·7 millions
1902	282·4 „

Increase 110·7 „ equal to 64 per cent.

The above figures are subject to the careful reservations and explanations given in the source from which

they are drawn; such, however, are unimportant, in view of the figures disclosed; for, unfortunately for this country, it is not a question of a few millions, or of one or two per cent.

The author, in his professional practice, has repeatedly had occasion to investigate the comparative position of old-established businesses in relation to their younger rivals. Such old businesses find themselves passed in the race by younger firms starting free from old traditions, and the author has been instructed by those interested in the older businesses to trace out the cause and suggest the remedy. In the previous chapter we have shown that the same principles and the same arithmetic control productive-amalgamators and industrial nations alike, and we will, therefore, look at these figures from the point of view of a commercial expert. Let us then suppose the above statistics relate to three similar businesses, belonging to three companies, A, B, C, respectively, in which all the employés are shareholders.

At the commencement of a period of twenty-two years A has a larger business than either B or C. In the period—

A increases its sales by $12\frac{1}{2}$ per cent. only, yet increases its purchases of goods such as it formerly manufactured by 83 per cent.

B increases its sales by 61 per cent., and yet increases its purchases of manufactured goods by 42 per cent. only.

C increases its sales by 64 per cent., and yet increases its purchases of manufactured goods by 36 per cent. only.

At the close of the period the annual sales of A, instead of being the largest, are the smallest of the three.

There is no business man, to whom these figures were submitted, who would hesitate to say that, under the existing methods, A is hopelessly on the downward grade. Not only has A failed to secure its proportionate share of the continuous growth of business, but it has been driven to purchase an enormously increased proportion of goods which it formerly manufactured by its own workpeople, whereby necessarily the equivalent of the wages, which would have gone to the maintenance and increase of such workpeople, has been diverted to its competitors. These conclusions are equally true of this country when compared with its two principal competitors, except that the purchase of goods formerly manufactured is far more serious to a country than to an industrial company; the latter, *qua* company, may suffer only the obsolescence of its plant, the former loses the means of livelihood of such of its inhabitants as are engaged in the industry, with the resulting tendencies set out in the previous chapter (page 345).

In a previous chapter (page 320) it was laid down that the relative wealth of countries on the same plane of civilisation is, *ceteris paribus*, proportionate to their respective populations. If, therefore, the fiscal policies of the three countries in the period have resulted in the greater increase of wealth of Germany and the United States, we shall find such greater increase reflected in the relative increase of population. We are only able to give figures from 1880 to 1900; these, however, are sufficient for our purpose.

From 1880 to 1900—

The population of the United Kingdom increased from 34·6 millions to 41·1 millions, equal to 18 per cent. The population of Germany increased from 45·23 millions to

56·36 millions, equal to 24 per cent. The population of the United States increased from 50·15 millions to 76·3 millions, equal to 50 per cent.

Let us assume the like rates of increase for another twenty years.

In 1920—

The population of the United Kingdom would be 48·5 millions.

The population of Germany would be 69·79 millions.

The population of the United States would be 114·45 millions.

It is obvious that, if the same causes which operated on the two decades ending with 1900 continue till 1920, this country, if the defence of the Empire continues to be borne by the inhabitants of these islands alone, would become a secondary Power in relation to Germany and the United States, and its smaller population could not bear the weight of armaments which might be undertaken by either of those nations.

There is another point of view from which we may view this question. In the previous chapter (page 354) we have indicated the economical loss to a country resulting from the forced emigration of a unit of faculties, and the economical gain, similar to the presentation of a piece of productive machinery, to the country which absorbs such unit. During the period under review, from 1880 to 1903 inclusive, under our free trade regime there have been driven abroad nearly three millions of British-born subjects, the majority of whom were aged between 15 and 40, the period of highest productivity. To state the cost of each unit to this country at £150 is, without doubt,

to under-estimate it, and we thus get a capital outlay of some £450,000,000 lost to this country, because it could not provide the several units with work. The resulting tendency to impoverishment has had its natural effect in a continuous reduction of the birth-rate in recent years.

Of the three millions thus forced abroad about two millions went to the United States, our principal trade rival. We will ask the reader at this point to re-peruse what is stated on page 357 *et seq.*, regarding the purchase by a manufacturing nation of agricultural produce which it cannot itself produce. If in that argument for A we substitute the United Kingdom, for C the United States, and for D Canada, we have a fair statement of the factors of the problem, except that Canada is not a foreign country but a part of the British Empire.

We will not trespass farther into the territory of Communital Economy. The subject of the section is one on which we feel deeply. But for this country's fatuous fiscal policy it seems to us that the millions of British subjects driven to foreign countries might have prospered here, or have gone to our Colonies and Dependencies to co-operate with us in the common objects of nationhood. With the development of steam navigation and the dominion of the seas, the British Empire might have become as homogeneous and self-contained as the United States of America, and emigration to any part of it have been the same economically as in the United States the removals of eastern families to the west. But this theme would bring us into the domain of party politics, which in this book we must eschew.

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